The business magazine of the farm & industrial equipment industry

June 21, 1982
TWO DOLLARS

implement & tractor

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The GENTLE GIANTS: Strong Advertising Pays Off for the Caldwells page 10

Do We Really Regard Service So Highly? page 5

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INTERTEC PUBLISHING CORP.

Implement & Tractor

The business magazine of the farm & industrial equipment industry

June 21, 1982 • Vol. 97 • No. 14

8: **Back to the Campus for Management Insights.** Marketing & Management Conference of FIEI goes to Ohio State U. for a five-professor seminar covering topics such as agriculture's future, leasing's pros and cons, product liability today, managerial concepts, and changing lifestyles and their impact on the marketplace. Extra attraction: NBC's Irving R. Levine.

10: **Caldwell Brothers – the Gentle Giants – Give It 100 Per Cent.** They haven't been in business long, but the Caldwells at Canton, Mo., have made themselves known with a strong promotional effort and a relentless schedule of direct calls. "I enjoy selling farm equipment," says Dan, "but it hasn't been easy. I wouldn't want to do anything else in the world."

14: **Plan to be a Winner.** Part of the selling battle, says Walt Buescher, I&T's special contributor on "Year of the Salesman" topics, is to sell yourself on the idea that you can overcome the adversity that we all face. Then it's a matter of conveying this positive attitude to the customer.

On the cover... Dan Caldwell of Canton, Mo., hard-working Massey dealer, tries to make at least 20 cold calls on customers each week.

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RETAIL SALES OF WHEEL TRACTORS*
(In Units)

	Total Wheel Tractors†				Cumulative for Jan.-Mar., 1981				Cumulative for Jan.-Mar., 1982			
	Mar. 1981		Mar. 1982		Farm Type				Farm Type			
	Farm	Non-Farm	Farm	Non-Farm	2-Wheel Drive	4-Wheel Drive	Total Farm	Non-Farm	2-Wheel Drive	4-Wheel Drive	Total Farm	Non-Farm
Alabama	166	33	116	26	374	13	387	66	289	6	295	50
Alaska	2	2	1	3	6	.....	6	13	6	.....	6	3
Arizona	70	33	42	21	183	19	202	87	152	26	178	114
Arkansas	279	46	180	29	714	118	832	82	404	44	448	60
California	437	223	246	91	973	88	1,061	567	711	61	772	250
Colorado	127	51	71	26	255	53	308	121	168	34	202	76
Connecticut	23	14	15	9	34	1	35	33	29	1	30	30
Delaware	11	.....	17	2	30	1	31	9	26	2	28	11
Florida	195	107	190	60	550	13	563	275	398	15	413	146
Georgia	276	53	162	32	656	9	665	124	460	9	469	84
Hawaii	11	9	4	11	17	3	20	18	12	1	13	19
Idaho	228	19	130	5	338	61	399	51	209	48	257	24
Illinois	472	66	439	40	999	202	1,201	166	1,066	201	1,267	107
Indiana	227	31	187	19	515	90	605	84	464	98	562	67
Iowa	518	18	477	10	1,332	158	1,490	43	1,291	134	1,425	22
Kansas	211	39	240	15	482	127	609	72	620	119	739	44
Kentucky	329	78	373	20	840	12	852	145	771	5	776	40
Louisiana	271	94	173	52	609	74	683	170	377	17	394	153
Maine	23	5	14	3	46	1	47	18	62	1	63	6
Maryland	32	51	43	12	93	9	102	98	108	4	112	42
Massachusetts	4	32	10	19	23	.....	23	62	33	.....	33	46
Michigan	164	71	172	36	420	74	494	165	429	63	492	78
Minnesota	418	26	356	7	862	150	1,012	74	792	122	914	29
Mississippi	268	29	136	19	583	70	653	77	387	29	416	45
Missouri	283	48	278	26	623	70	693	105	636	73	709	75
Montana	77	14	82	10	167	47	214	36	157	42	199	29
Nebraska	289	11	237	12	670	75	745	37	748	76	824	28
Nevada	14	12	9	4	28	.....	28	24	14	3	17	12
New Hampshire	2	4	13	5	10	.....	10	18	30	.....	30	12
New Jersey	26	27	27	24	56	.....	56	78	58	1	59	62
New Mexico	39	23	24	9	85	10	95	70	116	3	119	27
New York	167	67	163	51	395	33	428	167	370	30	400	116
North Carolina	275	44	221	33	713	11	724	126	602	11	613	69
North Dakota	196	4	262	9	323	192	515	13	440	209	649	19
Ohio	280	71	228	38	636	86	722	170	536	66	602	81
Oklahoma	163	69	199	81	363	56	419	177	489	49	538	224
Oregon	73	28	70	2	198	25	223	79	224	26	250	21
Pennsylvania	167	73	188	37	402	19	421	185	390	13	403	107
Rhode Island	.....	6	1	2	2	.....	2	13	2	.....	2	4
South Carolina	99	32	77	18	271	6	277	76	208	6	214	55
South Dakota	136	6	153	7	311	66	377	16	381	42	423	16
Tennessee	231	39	239	32	565	21	586	86	544	13	557	78
Texas	712	407	658	221	1,891	122	2,013	853	1,941	90	2,031	698
Utah	44	47	37	15	157	9	166	74	105	7	112	42
Vermont	25	8	26	3	59	.....	59	11	43	3	46	6
Virginia	148	40	162	26	323	5	328	112	371	8	379	50
Washington	137	31	117	19	289	50	339	63	282	39	321	45
West Virginia	31	12	37	7	65	.....	65	37	70	.....	70	11
Wisconsin	374	43	284	21	740	59	599	96	679	67	746	72
Wyoming	44	13	28	7	83	9	92	52	69	10	79	24
U.S. Government	3	14	.....	1	4	.....	4	32	1	.....	1	5
Miscellaneous‡	9	30	32	64	46	.....	46	116	88	.....	88	213
TOTAL	**8,806**	**2,354**	**7,646**	**1,351**	**20,409**	**2,317**	**22,726**	**5,544**	**18,858**	**1,927**	**20,785**	**3,747**

Data released May 20, 1982, Farm & Industrial Equipment Institute.

*Figures do not include garden tractors, motor tillers or contractors off-highway types. Report includes units marketed by these firms: Allied Farm Equip. (Leyland Satoh); Allis-Chalmers; Belarus; J I Case; Deere; Deutz; Ford; International Harvester; Long; Massey-Ferguson; R. M. Wade (Satoh); Steiger; Versatile; and White.

†The monthly sales are those reported for that month only. The cumulative totals are subject to revision reflecting updating in the basic sales data.

‡Sales reported as miscellaneous are retail sales which cannot be classified by state or as U.S. Government. They include sales and dispositions that do not go through usual marketing channels such as gifts to non-profit organizations, intra-plant or company transfers, etc.

AUCTION PRICES OF USED EQUIPMENT

An exclusive I&T monthly report of actual prices paid recently at these leading national wholesale auctions.

Asterisk beside tractor price indicates highest bid offered on tractors which were not sold.

JONES FARM EQUIPMENT CO. Dothan, Alabama May 11, 1982

CASE TRACTORS

1690 diesel, 1981 (Excellent) 12,000
580 diesel, ldr., backhoe, 1972 (Fair) 4000*

DEUTZ TRACTOR

6006 diesel (Fair) 2300*

MASSEY-FERGUSON TRACTORS

1100 diesel, 1966 (Fair) 3000
1085 diesel, 1974 (Fair) 4200
275 diesel, 1975 (Excellent) 6350*
245 diesel, 1979 (Excellent) 5950
180 diesel, 1968 (Good) 3250*
180 diesel, 1966 (Good) 3150*
180 diesel, 1966 (Fair) 2450
180 diesel, 1966 (Good) 3250*
175 diesel, 1972 (Fair) 2950*
175 diesel, 1967 (Good) 3200
175 diesel, 1967 (Good) 3500
175 diesel, 1967 (Good) 3450*
175 diesel, 1967 (Good) 3300
3165 diesel, 1968 (Rough) 1850*
165 diesel, 1975 (Rough) 2350*
165 diesel, 1974 (Good) 3600*
165 diesel, 1968 (Good) 3000
165 diesel, 1966 (Fair) 2550
135, 1970 (Excellent) 3500
135, 1970 (Excellent) 3300*
135, 1970 (Excellent) 3500
135, 1969 (Good) 2600
135, 1968 (Good) 2575
65 diesel, 1961 (Fair) 1300
65 diesel, 1960 (Good) 1725
50, 1959 (Fair) 1125
35, 1963 (Good) 1900*
35, 1956 (Good) 1750
35, 1956 (Fair) 1350*
TO30, 1952 (Fair) 650

FORD-FERGUSON TRACTOR

9N, 1946 (Fair) 700

FORD TRACTORS

8600 diesel, duals, 1974 (Rough) ..2950
8600 diesel, 1971 (Good) 4600
8000 diesel, 1970 (Fair) 3500
7000 diesel, 1975 (Good) 5250*
6000 diesel, 1961 (Fair) 1000
5600 diesel, 1976 (Good) 7900*
5000 diesel, 1968 (Good) 4200
5000 diesel, 1965 (Fair) 3400
4000 diesel, 1972 (Good) 4100*
3000 diesel, 1968 (Fair) 2600
3000 diesel, 1966 (Good) 3200
3000 diesel, 1966 (Good) 3150*
2000, 1974 (Rough) 2300
2000, 1967 (Good) 2700
1700 diesel, 1979 (Excellent) 4600*
851, 1958 (Good) 1800
841 diesel, 1958 (Fair) 1450
641, 1960 (Good) 1950
640, 1957 (Fair) 1175
640, ldr., 1955 (Good) 1900
640, 1955 (Good) 1750
Sup. Maj. diesel, 1962 (Rough) 400
Jub., 1953 (Good) 1750
Jub., 1953 (Good) 1650*
Jub., 1953 (Fair) 1100
8N, 1951 (Good) 1325
8N, 1951 (Good) 1150
8N, 1950 (Good) 1350*
8N, 1950 (Good) 1150
8N, 1950 (Good) 1200
8N, 1949 (Fair) 1000

INTERNATIONAL HARVESTER TRACTORS

1466 diesel, 1973 (Fair) 5000
664 diesel, 1972 (Rough) 1900*
560 diesel, 1959 (Rough) 625*
504, 1963 (Rough) 500
504, 1963 (Fair) 1200
444 diesel, 1968 (Fair) 875
404, 1964 (Good) 1350
400 diesel, 1955 (Fair) 600
284 diesel, 1978 (Good) 4050*
140, cult., plt., plow, 1966 (Good) 3050
140, cult., plt., 1960 (Good) 2675*
130, 1957 (Good) 1800
A, 1944 (Fair) 300
Cub Loboy, mo., 1963 (Good) 1100
Cub, cult., plt., plow, 1953 (Excellent) 1650
Cub, mo., 1951 (Good) 1300
Cub, cult., plt., 1948 (Good) 1350*

JOHN DEERE TRACTORS

3020 diesel, 1965 (Rough) 2150
3010 diesel, 1962 (Good) 2700*
2630 diesel, 1975 (Good) 5900
2630 diesel, 1974 (Good) 5250*
2040 diesel, 1978 (Good) 5600
2020 diesel, 1977 (Good) 3350*
2010 diesel, 1962 (Fair) 1350
1530 diesel, 1974 (Good) 3750
1010 diesel, ldr., 1961 (Good) 1600
430, 1958 (Fair) 1025*
B, 1951 (Good) 400
MT, 1952 (Fair) 360
M, cult., plt., plow, 1950 (Excellent) 1450

LONG TRACTOR

384 diesel, (Fair) 800*

YODER & FREY, INC. Archbold, Ohio May 10 & 11, 1982

INTERNATIONAL HARVESTER TRACTORS

A 580
154 Loboy (Fair) 1400*
Sup. C, 1952 (Rough) 575
H, 1947 (Fair) 600
M, 1947 (Rough) 740
M, 1947 (Fair) 800*
Sup. M, 1952 (Fair) 825
Sup. M, 1947 (Good) 750
Sup. M, 1947 (Good) 830
300, (Good) 500*
300, ...640
350, 1957 (Fair) 875
2400, 1965 (Good) 2500*
400, ldr., 1956 (Rough) 1700*
400, 1956 (Rough) 900*
400, 1956 (Fair) 875
434 diesel, 1961 (Fair) 2550
460, 1961 (Fair) 1225*
460 diesel, 1960 (Good) 1725*
504, 1964 (Rough) 1900*
560 diesel, 1960 (Fair) 2500
560, 1959 (Rough) 1325
560, 1958 (Good) 1600
656, (Good) 3000*
656, 1968 (Fair) 3600*
806 diesel, 1965 (Rough) 3000
806 diesel, 1965 (Fair) 3700*
806 diesel, 1965 (Good) 4400
806 diesel, 1963 (Good) 4500*
856, 1969 (Good) 4350
986, 1978 (Good) 8400*
986 diesel, 1979 (Good) 13,500
1066 diesel, 1976 (Good) 10,700*
1086, 1978 (Good) 16,000*
1206 diesel, 1965 (Fair) 5525
1256 diesel, 1968 (Fair) 5900*
1466 diesel, 1975 (Good) 9700*
1466 diesel, 1975 (Good) 8600*
1566 diesel, 1974 (Good) 11,200*
1586 diesel, 1979 (Good) 14,750*
1586 diesel, 1978 (Good) 14,000*
3788, ...28,000*
TD-6, ...1875
Sup. MTA, ...840
Sup. MTA, 1954 (Good) 1175

JOHN DEERE TRACTORS

A 300
B, 1948 (Good) 650
G, 1950 (Fair) 725*
40, cult., 1954 (Fair) 1350*
60, 1953 (Rough) 775*
60, 1954 (Rough) 450
420, 1947 (Fair) 950*
620, 1956 (Rough) 535
520, 1956 (Fair) 1450*
520, 1952 (Good) 1450
720, 1956 (Rough) 1850
1530 diesel, 1978 (Excellent) 4700*
2010, 1962 (Rough) 1700
2010 diesel, 1962 (Rough) 1275
2630 diesel, (Good) 7400*
3010 diesel, 1961 (Rough) 3000*
4010, 1963 (Fair) 2950*
4020 diesel, 1968 (Good) 7200
4020, 1964 (Fair) 5100*
4020 diesel, 1966 (Good) 6450*
4020 diesel, 1968 (Good) 6700*
4020 diesel, 1965 (Fair) 5400*
4020 diesel, 1965 (Fair) 5600*
4020 diesel, 1969 (Good) 6400*
4230, 1976 (Good) 10,400*
4320, 1973 (Good) 8800*
4430 diesel, 1975 (Good) 15,000
4430 diesel, 1975 (Fair) 12,450
4430 diesel, 1975 (Good) 13,600*
4440, ...28,750*
4440, 1978 (Good) 18,250*
4630 diesel, 1977 (Good) 14,100*
4630, 1975 (Good) 11,500*
5020 diesel, 1967 (Good) 6250*
5020, 1967 (Good) 5000

FORD TRACTORS

8N, 1952 (Good) 1975
8N, 1950 (Rough) 835
8N, 1952 (Good) 1775
8N, ...1100
9N, 1947 (Rough) 750
9N, 1946 (Fair) 800
800, ldr., 1956 (Fair) 2725
3000 diesel, 1966 (Fair) 3200
4000 diesel, 1973 (Fair) 2850*
4000, ldr., 1971 (Fair) 3200
4000, ldr., 1967 (Fair) 2900
7000, 1975 (Good) 6000
8600, 1975 (Fair) 7000*
9600, 1972 (Good) 8500*
5600, 1980 (Excellent) 7900
4500, ldr., 1976 (Good) 6800
Jub., 1953 (Fair) 1125
Jub., 1953 (Fair) 1225*

WHITE TRACTOR

4-150, 1973 (Good) 9000*

DAVID BROWN TRACTORS

990, 1962 (Fair) 1625
1200 diesel, 1963 (Fair) 2600
1212 diesel, 1972 (Rough) 2475

ALLIS-CHALMERS TRACTORS

C, 1950 (Rough) 450
CA, cult., 1952 (Good) 940
CA, cult., 1951 (Good) 828
G, 1950 (Good) 1150
WD-45, 1953 (Fair) 450*

FOR MORE INFORMATION ...*on products advertised or described in this publication, use...* **I&T's Handy Reply Card**

As a free service for our readers, we forward your inquiry to manufacturers in whose products you are interested. I&T's Handy Reply Card is preaddressed.

D-17, 1964 (Fair) 1925
D-17 diesel, 1966 (Rough) 925
D-17, ldr., 1960 (Good) 1675
185 diesel, 1972 (Good) 6900*
200 diesel, 1972 (Good) 8000*
210 diesel, 1972 (Fair) 5600*

CASE TRACTORS

D 330
450, ldr., ... 6500*
430 diesel, 1963 (Good) 1100
480 ldr., ... 2400*
530, 1966 (Fair) 2900*
830, 1966 (Fair) 2700*
830 diesel, 1967 (Rough) 1500*
830, 1965 (Fair) 1050
930 diesel, 1963 (Good) 3000*
930 diesel, 1967 (Fair) 2600
1030 diesel, 1968 (Fair) 4000
1270 diesel, 1972 (Good) 8500*
1270 diesel, 1975 (Fair) 9000*

MASSEY-FERGUSON TRACTORS

TO-20, 1947 (Fair) 935
TO-30, 1951 (Rough) 1050
TO-30, 1951 (Fair) 1225
TO-30, 1948 (Fair) 1325
TO-35, 1958 (Good) 1430
65 diesel, 1961 ..... 2700*
135, 1967 2650
135, 1963 (Good) 2750*
165 diesel, 1974 (Good) 4400*
165, 1970 3000
175 diesel, 1970 (Rough) 3200*
175 diesel, 1968 (Rough) 3100*
175, 1963 (Fair) 2625
180 diesel, 1972 (Rough) 3225
180, 1973 (Good) 2050*
1085 diesel, 1975 (Fair) 5650
1085, (Fair) 6200*
1105, ... 7600
1130, 1969 (Fair) 4950
1800 diesel, 1973 (Good) 9000*
1800, (Rough) 9000*
2705, 1979 (Good) 16,000*

OLIVER TRACTORS

77, 1951 (Rough) 310
Sup. 55, 1954 (Fair) 1275*
1600, 1961 (Rough) 1700*
1650, 1965 (Fair) 3100*
1650, 1967 (Fair) 2475*
1655, 1972 (Good) 5400*
1850 diesel, 1967 (Good) 3450
1855, 1971 (Fair) 5400*

DEUTZ TRACTORS

D9006, (Fair) 3100*
D13006, (Fair) 7700*
4600, (Fair) 1700

COCKSHUTT TRACTORS

30, 1951 (Fair) 675
540, ... 800
1650 diesel, 1966 (Good) 3200

MASSEY-HARRIS TRACTOR

Pony, 1950 (Fair) 1600

MINNEAPOLIS-MOLINE TRACTORS

A4T-1600, 1971 (Good) 7300*

NOTES
Prices reported are for individual sales at wholesale on "as is," "cash and carry" basis.
Prices reported are NOT averages.

Condition classifications: EXCELLENT means—Engine: in perfect condition, 400 to 600 hours of use; Rubber: 80% tread remaining, no breaks or cracks; Paint: original and bright; General Appearance: excellent.

GOOD means—Engine: good running condition; Rubber: 70% tread remaining, no breaks or cracks; Paint: original paint or a good repaint job; General Appearance: good over-all.

FAIR means—Engine: possibly in need of a minor overhaul to restore; Rubber: 60% tread remaining, some cracking evident in side walls; Paint: only fair, weathered and some rust apparent; General Appearance: worn, some dents, minor parts such as gage covers missing or broken.

ROUGH means—Engine: obviously in need of a major overhaul; Rubber: smooth; Paint: scarred, weathered, rusty, needs painting urgently; General Appearance: dents, ruptures, broken parts, loose wires, some components such as lights broken, missing or inoperative.

DEMONSTRATOR means—used for demonstrating only and in practically new condition.

Don't sell too low...
and don't pay too much...
stay up-to-date on used equipment values with I&T

Delco's
"Mean Blue Machine"
for the farm equipment dealer

It pays
to use it . . .
if you can keep it
around that long.

Delco pressure washers fit right into your farm equipment business for two good reasons: 1) They're an easy sale and a quick lease 2) They're ideal for use in your service department . . . if you can keep one on hand that long! Call or write today for more information.

Dealer-Distributor inquiries invited

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Delco Mfg. Co., Inc.
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Circle (4) on Reply Card

***turbo*® Precleaners**

The No. 1 PRECLEANER

Eliminates up to 99% of dust, dirt, chaff, rain and snow!
- Extends filter life up to 10 times longer.
- Extends engine life.
- No exhaust connections.

Traffic stopping display moves precleaners off the shelf.
- Low inventory requirement — fast turnover.
- Advertising in leading farm publications.
- Full one year warranty.

SURECO
4701 HUMBOLDT AVENUE NORTH • MINNEAPOLIS, MN 55430
PHONE (612) 529-9166

Circle (5) on Reply Card

RETAIL SALES OF SELECTED FARM EQUIPMENT – Jan.-Mar. 1981 and 1982(1)
(In Units)

	Combines Self-Propelled		Corn Heads		Hay Balers(2)		Windrowers Self-Propelled Power Units		Windrowers Self-Propelled Total Heads		Grinder-Mixers		Shear-Bar Forage Harvesters(3)	
	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982
Alabama	23	6	4	1	30	5	.....	1	.....	1	25	22	3	4
Alaska	.....	.....	.....	.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....
Arizona	28	11	1	4	13	3	19	8	20	8	1	5	3	4
Arkansas	174	43	1	3	29	7	.....	.....	.....	.....	23	12	2	.....
California	68	19	9	12	47	18	84	45	96	50	2	3	12	5
Colorado	56	50	17	29	26	20	23	10	21	12	19	10	5	5
Connecticut	.....	.....	.....	.....	2	4	.....	.....	.....	....	.....	1	3	4
Delaware	6	3	3	2	2	.....	.....	.....	.....	.....	2	3	.....	.....
Florida	9	7	5	.....	15	9	.....	.....	.....	.....	7	2	2	8
Georgia	44	37	14	13	28	21	.....	.....	.....	.....	19	27	9	6
Hawaii	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Idaho	68	20	.....	– 1	42	26	42	17	43	20	8	8	3	5
Illinois	390	300	316	317	31	26	3	.....	2	– 1	135	95	36	20
Indiana	215	131	197	118	35	13	1	.....	.....	.....	86	65	13	15
Iowa	373	316	342	315	46	23	18	10	17	9	357	253	47	37
Kansas	338	219	25	17	39	34	57	31	57	30	60	59	12	20
Kentucky	52	24	23	16	42	20	6	.....	1	.....	73	82	27	12
Louisiana	47	19	.....	1	4	3	.....	.....	.....	.....	4	2	2	1
Maine	.....	.....	.....	.....	2	2	.....	.....	.....	.....	1	1	2	4
Maryland	14	11	21	13	14	5	1	2	1	3	9	9	7	5
Massachusetts	.....	.....	.....	.....	4	3	.....	.....	.....	.....	.....	1	2	1
Michigan	70	39	55	55	19	15	4	1	4	1	63	57	39	20
Minnesota	221	159	148	104	92	54	54	50	57	58	176	152	66	51
Mississippi	67	21	2	1	20	6	.....	.....	.....	.....	14	7	4	2
Missouri	140	86	44	49	38	22	2	3	2	3	124	99	17	11
Montana	81	43	.....	.....	25	13	37	30	41	37	14	17	2	4
Nebraska	200	171	141	110	19	11	37	30	40	35	129	124	25	35
Nevada	1	.....	.....	.....	3	7	6	1	5	2	.....	.....	.....	.....
New Hampshire	.....	.....	.....	1	7	4	....	.....	.....	.....	1	.....	.....	2
New Jersey	3	1	4	2	2	6	.....	.....	.....	.....	3	3	2	1
New Mexico	9	3	.....	2	16	17	9	5	9	5	3	1	.....	2
New York	12	22	16	22	45	36	5	4	6	4	32	26	38	49
North Carolina	41	27	37	28	31	23	.....	.....	.....	.....	45	25	5	11
North Dakota	210	115	6	20	7	4	49	36	51	38	45	37	4	4
Ohio	148	70	122	82	62	44	1	1	1	1	93	79	31	25
Oklahoma	146	90	1	4	54	24	18	16	18	15	33	36	2	1
Oregon	38	18	2	3	33	33	22	18	26	21	7	4	8	3
Pennsylvania	23	22	16	20	71	66	8	7	7	7	83	77	40	42
Rhode Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Carolina	26	8	3	7	6	5	.....	.....	.....	.....	15	7	7	.....
South Dakota	80	46	25	28	6	4	52	36	55	53	77	62	23	20
Tennessee	41	27	7	10	70	23	.....	.....	.....	.....	46	53	13	11
Texas	218	107	21	28	104	55	15	4	16	6	56	63	12	9
Utah	2	3	.....	.....	18	23	14	12	14	12	3	3	3	4
Vermont	.....	2	.....	2	6	3	.....	.....	.....	.....	1	.....	6	13
Virginia	10	14	8	16	42	29	.....	.....	.....	.....	18	33	13	15
Washington	61	16	4	2	20	27	19	7	21	7	2	2	12	9
West Virginia	.....	.....	.....	.....	19	8	.....	.....	.....	.....	4	7	.....	1
Wisconsin	55	41	62	70	168	93	38	22	39	23	147	124	158	114
Wyoming	11	3	1	1	12	17	14	8	14	9	6	4	2	.....
U.S. Government	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Miscellaneous (4)	.....	.....	12	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....
TOTAL	**3,819**	**2,370**	**1,715**	**1,527**	**1,468**	**916**	**658**	**416**	**684**	**470**	**2,071**	**1,762**	**722**	**615**

Data released May 20, 1982, Farm & Industrial Equipment Institute.

(1) Includes revisions for prior months.
(2) For making bales of under 200 lbs.
(3) Pull-type, mounted, self-propelled.
(4) Sales reported as miscellaneous are retail sales which cannot be classified by state or as U.S. Government. They include sales and dispositions that do not go through usual marketing channels such as gifts to non-profit organizations, intra plant or company transfers, etc.

Mower Conditioners All Types 1981	1982	Manure Spreaders Conveyor-Type 1981	1982	
11	9	4	.....	Alabama
1	1	.....	.....	Alaska
1	.....	1	2	Arizona
42	33	30	21	Arkansas
10	6	20	14	California
15	10	19	13	Colorado
7	6	20	20	Connecticut
1	2	24	5	Delaware
12	11	4	1	Florida
32	22	10	9	Georgia
.....	1	.....	.....	Hawaii
17	6	35	35	Idaho
92	79	200	164	Illinois
63	33	185	107	Indiana
148	63	519	449	Iowa
82	60	58	60	Kansas
115	76	89	79	Kentucky
7	15	6	5	Louisiana
7	4	10	12	Maine
9	10	56	54	Maryland
4	5	22	12	Massachusetts
59	23	243	165	Michigan
117	68	387	384	Minnesota
11	13	8	5	Mississippi
140	118	82	80	Missouri
22	13	6	8	Montana
77	56	61	78	Nebraska
1	.....	1	5	Nevada
5	4	7	11	New Hampshire
1	5	12	11	New Jersey
1	3	4	1	New Mexico
79	64	475	412	New York
37	25	35	38	North Carolina
11	10	17	18	North Dakota
91	46	288	216	Ohio
59	61	8	19	Oklahoma
30	14	18	37	Oregon
67	103	392	314	Pennsylvania
.....	.....	.....	1	Rhode Island
21	10	4	5	South Carolina
16	8	59	57	South Dakota
80	117	39	36	Tennessee
103	89	45	48	Texas
15	21	34	27	Utah
8	11	49	47	Vermont
61	68	49	74	Virginia
26	13	30	29	Washington
15	16	20	12	West Virginia
248	129	637	552	Wisconsin
5	3	9	8	Wyoming
.....	.....	.....	.....	U.S. Government
.....	.....	.....	.....	Miscellaneous
2,082	1,563	4,331	3,760	TOTAL

Editor's Notebook

(Continued from page 5)

farmer was asked if he wanted any or all problem areas taken care of, and he was offered a 10 per cent discount on replacement parts. The service labor involved was charged at the regular retail rate.

Each inspection session was scheduled for the morning. When it was completed, the dealer took the customer to lunch.

Results: The mechanic-turned-salesman signed up 20 combine inspections. That's $3,580 for starters. The combines that underwent repairs (most of them did) produced parts and service sales revenue ranging from $2,000 to $5,000 per unit.

After I heard what this dealer had done, I passed the story on to some industry marketing people. Guess what they asked every time: "Did the dealer get any of those combine owners to trade?"

As I heard the story, the dealer did not. This suggested to me not that the dealer lacked salesmanship smarts. Rather, I'll bet he was a shrewd judge of current market realities as they affect his customers. He knew he had slim wholegoods sales chances, so he went after an alterante revenue source.

That dealer sent about 20 combines back to the farm that were just about like new. Did he outsmart himself?

I don't think so. True, those farmers can now postpone a combine purchase for a while, but consider how the dealer has positioned himself with regard to getting their business next time. Consider also how he has helped his customer stay in good operating condition. And made some money himself.

If that dealer had been hell-bent to push through a lot of sales with this project, he probably could have gotten some. But those farmers would have shopped the competition, too, right? And the competition would have plucked off some of those deals and squeezed the margin on others to the point of being invisible. Perhaps that dealer evaluated the margin-in-hand from the inspection deal versus the margin-in-the-bush from a sale or two and liked the former over the latter.

Should others do it? This dealer's story is *not* passed along to suggest that everyone should try the idea. Chances are, only a minority of dealers have the right service technician for the job. Instead, I am urging dealers to think creatively about the asset they have that makes them different from farm supply stores, catalogs, discount houses, "agents" and everyone else—their servicing capacity.

In its broadest sense, service is the lifeblood of this business. Who can deny it? So why isn't it embraced, elevated, exalted, marketed creatively, treated with respect—even *enjoyed?* It's a challenge for everybody—not just dealers and distributors but manufacturers and, indeed, anyone else who makes his living from this stuff.

Long Mfg. Fell Out of the List of Big Ad Spenders; Sorry, Don Granberg!

Donald R. Granberg is vice-president and general manager of Davenport operations for Long Mfg. N.C. Don read the item in Editor's Notebook, May 7, which listed the big spenders in print advertising among farm equipment companies, as supplied by Agricom of St. Joseph, Mo.

After several minutes of intense reading which led to acute eyestrain, Don concluded correctly that somebody had goofed. Long Mfg.'s name had been erroneously omitted from the list when I&T picked it up. And the writer of these lines, who always likes to hear from Don, even when he's got a beef, was the culprit.

For the record: In 1981, Long Mfg. N.C., according to Agricom, was 48th among the top 150 advertisers in 161 farm publications and ag trade magazines. By our count, they were 10th among farm machinery advertisers. Their 1981 outlay of $698,336 was a 49 per cent increase on their 1980 expenditure of $469,402, according to Agricom's data.

The business magazine of the farm & industrial equipment industry

July 15, 1982
TWO DOLLARS

implement & tractor

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FARM EQUIPMENT SHOWS, CONVENTIONS, MEETINGS

Complete listings start on page 6

In the Manufacturers Edition
What Manufacturers Say About CAD-CAM

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Implement &Tractor

The business magazine of the farm & industrial equipment industry

July 15, 1982 • Vol. 97 • No. 15

6: **Conventions, Meetings, Shows, 1982-1983.** I&T presents its annual listing of dealer association conventions, farm machinery shows in North America and overseas, professional association gatherings and state and regional fairs.

12: **Fuel Efficiency Debate.** Manufacturers respond to I&T's March 21 article that said today's tractors had an "unimpressive track record" in Nebraska Tractor Tests.

A SPECIAL FOCUS ON SERVICE MATTERS

Today, many farm equipment dealers are turning to their service and parts departments to make up for declines in sales of wholegoods. Here are articles that come to grips with two ever-present concerns in every shop – hand tools and hydraulics. Watch future issues for more.

28: **Hand Tools.** How well your people are equipped determines both productivity and customer satisfaction – and you can help.

32: **Farm Equipment Hydraulics: Reviewing the Basics, Getting Up to Date.** Types of hydraulic systems – open-center, closed-center, load-sensitive. What are their advantages and limitations? The first of a six-part series.

On the cover... Dealers and farmers view the newest farm machinery at the California Farm Equipment Show & International Exposition held last February in Tulare's International Agri-Center.

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What's Ahead...

I&T SINCE 1986

July 15, 1982

U.S. RETAIL SALES IN MAY CONTINUED THEIR DOWNWARD TREND, according to the Farm & Industrial Equipment Institute's flash report:

	Unit Retail Sales					
	May			January-May		
	1982	1981	Pct. Change	1982	1981	Pct. Change
Farm Wheel Tractors:						
2-wheel drive						
40-100 hp	3,383	4,917	-31.2	17,500	22,151	-21.0
Over 100 hp	1,795	3,153	-43.1	13,898	17,132	-18.9
Total 2-wheel drive	5,178	8,070	-35.8	31,398	39,283	-20.1
4-wheel drive	557	678	-17.8	3,262	4,088	-20.2
Total Tractors	5,735	8,748	-34.4	34,660	43,371	-20.1
Combines (S-P)	597	1,175	-49.2	3,557	5,914	-39.9
Balers*	675	1,234	-45.3	1,967	3,372	-41.7
Forage Harvesters**	259	453	-42.8	1,056	1,444	-26.9
Mower-Conditioners	1,389	1,991	-30.2	3,576	4,935	-27.5

*Bales under 200 lbs. **Shear-bar type.

CANADA'S RETAIL SALES THROUGH MAY ARE ALSO AILING, reports the Canadian Farm & Industrial Equipment Institute. For the first five months, tractor unit sales were down 30 per cent from 1981's 10,087 to 7,006, with the biggest decline coming in the over-100-hp group: down 35 per cent from 3,712 units to 2,404. Self-propelled combines were off by 44 per cent over the five months, falling from 882 to 494 units.

"JAPANESE CHALLENGE" CONFERENCE OF FIEI'S INDUSTRIAL-CONSTRUCTION EQUIPMENT DIV. produced these quotes: James F. Bere, chairman, Borg-Warner--"If (the Japanese) decide to make export of large ag and off-road equipment a new national goal, they will do it, whether or not from our standpoint they can afford it." Robert Hanson, president, Deere (& FIEI chairman)--"American inventiveness, drive and desire can be marshalled. Then we'll learn how to face their competitive challenge, and in so doing, emerge a stronger and more competent force in the global marketplace." Harold Malmgren, president, Malmgren, Inc.--"Japan's changes in technology are built around four key areas: computer telecommunications, biotechnology and bioengineering, energy alternatives and new materials. Among the latter: fiber optics (expected to replace all copper in communications by 1987), ceramics--being used to make diesel engines that can withstand -20°C and still fire up in three seconds, and carbon fiber--expected to replace almost all other materials in an airplane by 1990, as well as reinforcing rods in concrete...."

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FUEL EFFICIENCY DEBATE: MANUFACTURERS RESPOND

Remember the article (I&T Mar. 21) that said today's tractors had an "unimpressive track record" at Nebraska? The author asked for responses, and here's a summing up of what he got.

By Frank Buckingham

■GOOD NEWS! Everyone in this business is for fuel efficiency! We'll bet everyone's for motherhood, too.

Of course, some are willing to sacrifice a bit of apple pie and fuel economy for performance features that they perceive to be factors that really sell tractors. And they do affect sales. Higher capacity hydraulic systems, hydraulically actuated controls, air conditioning, shift-on-the-go transmissions and other improvements are real attractions.

Many of these features increase tractor productivity in the field even though they reduce apparent operating economy in Nebraska Tractor Tests. Buyers must decide if productivity and comfort are raised enough to offset the added fuel needed to operate the improvements.

In I&T March 21, we had an article titled "The Industry's Tractor Fuel Efficiency—Not a Strong Track Record." We intended it to be thought-provoking, but some people found it just provoking.

We wanted to elicit some specific reasons for the apparent decline in fuel efficiency in recent years. Before the article came out, copies of it went to 11 industry representatives asking for comments or explanations for the seeming decline. We got nine responses. Three readers also wrote the author. So we suspect that most of the industry agrees with our position.

There were limited examples given of specific improvements, but the general response was that increased tractor sophistication increases productivity *and* fuel consumption, "but we're still working on fuel economy, too."

Cool takes fuel

Air conditioned cabs were often cited as features customers want and that take power. *But it is important to note that no tractor has been drawbar-tested at Nebraska with the air conditioner operating.* Such data will not be found in the test reports, and it was on test reports that the assertion of an "unimpressive track record" was made.

Some people misunderstood parts of the article. It was stated, for instance, that only wheeled diesel tractors were included in test comparisons. But one engineer said we had not included all his company's tractors tested from 1959 through 1970—and he provided a list that included nine gasoline and LP-gas tests. He said, "These averages radically affect the magnitude of change from the 1959-70 to the 1979-81 time frame and wouldn't appear to rate the emphasis shown in your article."

There was a vast difference in average economy of that firm's tractors between those time periods, but we couldn't condone averaging fuel economy of non-diesel and diesel engines together for any reason—certainly not just to offset the lower performance of newer diesel tractors.

This engineer concluded: "Our trend has been away from gasoline and LP tractors. This partially offsets the increased sophistication required by the marketplace in auxiliary hydraulics, (shift-on-the-go) transmissions, full power steering, air conditioning and increased electrical requirements. The marketplace has shown greater response to these areas than to fuel economy. We are, however, concentrating on improving future product lines." Similar statements were received from nearly every tractor manufacturer who responded.

Simpson's comment

Bill Simpson of J I Case said, and I agree completely, that one should "never rely on one figure pulled out of a test as the sole measurement of the quality of performance. Consider that figure in relation to everything else shown in the test."

Simpson and others pointed out, quite correctly, that the manufacturer's objectives may vary according to the tractor submitted for test. For instance, testing without ballast is one means of attaining high drawbar horsepower while sacrificing pounds of pull.

Though many tractors will never be ballasted as heavily as those models tested at Nebraska, a few may carry more weight to the field. And virtually all tractors have some ballast added for heavy field work. So a test without ballast may not provide an accurate indication of potential tractor performance, either. Also, adjusting fuel flow to maximum design limits may provide maximum power output for the test—and drive down fuel economy sharply.

We did use only one portion of

Detractions...or Improvements?

At Purdue U., Prof. Bruce Liljedahl teaches a course called "Tractors" to ag engineering students. He gave them copies of the Mar. 21 article on fuel efficiency and asked them to respond to the issue. Said Bryan Murphy:

"A farmer's production efficiency is the function of more than just the power efficiency of his tractor. He must also consider timeliness....Is fuel consumed to power the steering system greater than the fuel saved by turning the tractor around more rapidly at the end of every row? Is fuel consumed by the hydraulic unit greater than fuel saved by the enhanced control ability of the tractor operator? If so, fuel efficiency could be improved by returning to manual steering and manual control systems.

"Such tractors, of course, would not sell in today's market. The point is that these systems, which appear to reduce fuel efficiency in constant load tests, very likely improve fuel efficiency in actual production duty...."

OTHER PERSPECTIVES ON AVERAGE FUEL CONSUMPTION, 1959-1981

Manufacturer (No. of tests)	All tractors tested hp-hrs/gal		All tractors tested lbs/hp-hr		2-wheel drive lbs/hp-hr		4-wheel drive lbs/hp-hr	
	75% Max.	50% Max.	75% Max.	50% Max.	75% Max.	50% Max.	75% Max.	50% Max.
Allis-Chalmers (35)	12.15	10.24	0.575	0.628	0.572	0.679	0.612	0.745
Belarus (5)	13.63	11.97	0.513	0.584	0.521	0.593	0.500	0.570
Big Bud (1)	13.97	12.01	0.502	0.584	.....	.....	0.502	0.584
Case/David Brown (75)	12.81	11.23	0.544	0.620	0.543	0.617	0.552	0.643
John Deere (63)	11.96	10.17	0.585	0.688	0.589	0.692	0.547	0.650
Deutz (15)	13.99	12.35	0.499	0.565	0.499	0.565	.....	.....
FWD Wagner (2)	12.45	11.05	0.560	0.633	.....	.....	0.560	0.633
Ford (56)	12.42	10.81	0.561	0.646	0.562	0.645	0.555	0.659
Hesston-Fiat (13)*	13.17	11.44	0.534	0.618	0.534	0.618	.....	.....
International Harvester (71)	11.84	10.11	0.594	0.696	0.597	0.697	0.577	0.688
Kramer (1)	11.40	9.82	0.608	0.706	0.608	0.706	.....	.....
Kubota (16)	11.32	9.71	0.620	0.724	0.620	0.724	.....	.....
Lamborghini (1)	12.74	10.93	0.562	0.634	0.562	0.634	.....	.....
Leyland (5)	12.30	10.52	0.570	0.667	0.570	0.667	.....	.....
Long (8)	13.13	11.50	0.528	0.600	0.528	0.600	.....	.....
Massey-Ferguson (57)	12.45	10.80	0.565	0.655	0.562	0.647	0.587	0.703
Nuffield (3)	13.24	11.86	0.525	0.586	0.525	0.586	.....	.....
Porsche (2)	10.81	9.46	0.648	0.745	0.648	0.745	.....	.....
Same (3)	12.61	10.67	0.560	0.641	0.560	0.641	.....	.....
Satoh (1)	11.18	9.58	0.632	0.737	0.632	0.737	.....	.....
Steiger (21)	12.84	11.03	0.542	0.631	.....	.....	0.542	0.631
Ursus (2)	12.59	11.72	0.556	0.596	0.556	0.596	.....	.....
Versatile (5)	12.31	10.17	0.575	0.698	.....	.....	0.575	0.698
White (55)**	12.11	10.44	0.577	0.670	0.576	0.669	0.584	0.686
Yanmar (1)	11.95	10.37	0.578	0.666	0.578	0.666	.....	.....
Zetor (5)	13.38	11.24	0.523	0.636	0.523	0.636	.....	.....
Average (522)	12.37	10.67	0.568	0.658	0.568	0.658	0.560	0.660

(Nebraska Tests, 1959-1981, at 75 and 50 percent of Maximum Drawbar Load, wheeled diesel tractors)
*Includes Fiat tests before Hesston-Fiat
**Includes White, Minneapolis-Moline and Oliver tests

the Nebraska Tractor Tests for our fuel economy analysis, but we explained why. Unless you are comparing two identical tractor models, comparing gallons of fuel burned per hour or per acre is meaningless, so useful comparisons can only be made if figures are reduced to a common denominator.

What we said

So to quote from our earlier article: "A number of studies show that fuel consumption at 75 per cent of maximum drawbar load in the Nebraska Tractor Test is a reasonable approximation of tractor fuel consumption under load in normal field work. Other studies indicate that average annual fuel consumption for general work can be approximated by using fuel consumption at rated engine speed and 50 per cent of maximum drawbar load. *So these two tests have provided the basis for this study, and we've used hp/hrs/gal to put all tractors on an equal basis to show how much work each one can do on a gallon of fuel."* (Emphasis added now.)

No one questioned use of those tests to approximate annual fuel use. On the basis of little apparent change in average results of those tests, it still appears that the industry has made little improvement in tractor fuel efficiency in the last quarter-century.

Efficiency of some current models is better than it was for earlier tractors, and many are capable of doing more work per day or hour than their earlier counterparts. But, though most respondents insist that productivity of current tractors has improved, very few came forward with any quantitative measure of that improvement. It's questionable whether higher productivity of some current models can overcome as much as 17 per cent reduction in fuel efficiency compared with tractors of equal power (same paint color) tested earlier.

Pounds, not gallons

Some respondents complained that comparisons were made on a basis of hp-hrs/gal rather than lbs/hp-hr. Said one: "In no way can you compare the fuel being refined today with the fuel used 10 years ago—6.7 lbs. vs. 7 lbs. per gallon. This is about a 4 per cent difference. It is strongly suggested that you convert all fuel consumption rates to a standard mass."

So all 23 years of tests were rechecked and the chart converted to fuel consumption in lbs/hp-hr rather than hp-hrs/gal. (And we separated four-wheel-drive tractors at the same time. More of that later.)

Some minor errors in the original table were repaired, and Steiger people pointed out that we had not included some of their recently tested tractors. Copies of these 1981 tests didn't reach I&T in time for the Jan. 31, 1982 *Red Book*. Adding four models improved the Steiger average (1959-81) from 12.74 to 12.84 hp-hrs/gal at 75 per cent of maximum drawbar load and from 10.97 to 11.03 hp-hrs/gal at 50 per cent load. Other errors did not make significant changes in the averages.

Averages followed the same pattern regardless of whether fuel was measured in pounds or gallons. All tractors tested in 1979-81 used an average of 1.9 per cent more pounds of fuel at 75 per cent load compared with the average for 1959-70 tests. The comparable tests were 2.2 and 3.5 per cent for fuel use in hp-hrs/gal.

So, to check further, the average weight per gallon of diesel fuel was determined from reports for four different years. *If the quality of fuel has deteriorated as badly in recent years as some people say, the U. of Nebraska is to be commended for getting very high quality fuel.*

(More...)

Averages for the years checked were: 1959—7,009 lbs/gal; 1969—6.936; 1980—7.027; and 1981—6,966.

Thus, the lightest fuel used in those particular years was burned in 1969, several years before fuel quality supposedly began to deteriorate badly. The heaviest was used in 1980.

Four-wheel drives

Fuel use in lbs/hp-hr was averaged separately for four- and two-wheel-drive tractors in response to suggestions. Overall average fuel use by four-wheelers for 1959 was slightly lower compared with two-wheelers: 0.560 and 0.660 vs. 0.568 and 0.658 lbs/hp-hr respectively for 75 and 50 per cent of maximum drawbar load. This hardly amounts to the vast differences predicted by some readers. Differences between types was so small that the averages for all tractors were exactly the same as those for two-wheelers.

Deere, Ford and International Harvester four-wheelers used fewer lbs/hp-hr than did each company's average two-wheelers. But A-C, Case, MF and White two-wheelers had higher average efficiency than did their four-wheelers.

More viewpoints

Jim Merriman, Jr., of George Merriman Inc., Spokane, Wash., dealer for Versatile, said, "Versatile introduced the Cummins 'Constant Power' engine design into its tractor lineup in 1978. In Nebraska Test 1332, the 875 Versatile (280 hp) produced 14.35 hp-hrs/gal under heavy drawbar load at 2100 rpm. However, this tractor was able to produce 15.82 hp-hrs/gal at 1900 rpm with no loss in torque (actually, torque increased)....The 'Constant Power' engine eliminates the need for full throttle under even the heaviest loads. More work is produced per gallon at a lower engine speed with less engine wear...."

R. W. Beaman, Steiger Tractor, Inc., said: "The article does not acknowledge the fuel efficiency at lower operating rpm levels (e.g., 1700 rpm). Steiger's engine options (Cummins, Caterpillar) provide high torque rise capability. The operator can throttle back to a lower rpm, maintain the same or higher horsepower and enjoy a higher fuel efficiency...."

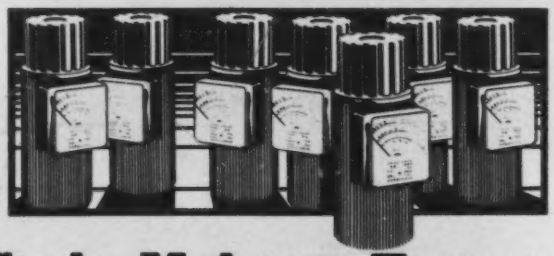
Steiger's average efficiency at 75 per cent load improved 5.1 per cent for 1979-81 tests vs. 1971-78 tests, and 3.6 per cent at 50 per cent of maximum load.

Jim Callaway, Hesston's tractor product manager, said: "A two-wheel drive would test better at Nebraska (on concrete), because of reduced drive train power losses. In the field, true efficiency will increase at least 20 per cent (with front-wheel assist)."

P. E. Lockie, White Farm Equipment, observed: "Removing the results of 36 oriental tractors tested during the 1971-81 period (produces) an improvement of up to 1.5 per cent in fuel efficiency at 75 per cent and 50 per cent maximum loads, as compared to the previous periods (1959-70)....We believe the oriental tractors will improve in fuel efficiency in the future."

A **Massey-Ferguson** engineer noted that the lower efficiency of Japanese tractors sold by MF cut the efficiency average of all Massey

(More...)



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Circle (7) on Reply Card

units. Also, the 2000 series units have two-pump, open-center hydraulic systems, which take more power than earlier MF versions. Current big models, he said, were designed before fuel became a major cost factor. Future models, he added, will re-emphasize fuel efficiency.

Bill Simpson of Case: "All our over-100-hp 90 series have substantial fuel savings over prior models. flow compensated hydraulic system only requires about 2.8 hydraulic hp—substantially lower than previous hydraulic systems."

Comparing the Case 1370 and 2390 models, Simpson says: "This efficiency achievement was the result of removing many parasitic forces:...16 parasitic horsepower were taken from the 2390 engine, resulting in improved fuel economy, more usable pto and drawbar power, and lower sound level."

Deere & Co. spokesmen cited Deere's Dy... an example of their efforts to improve fuel efficiency. The device can be used to field test tractors through repeatable computerized loading that removes the impact of varying soil conditions from test results. Noting that "the bottom line is field efficiency and productivity," they add that "a full power shift transmission may show about 4 per cent less efficiency than a simple transmission in tests, but it can provide 10 per cent or more improvement in actual field productivity."

The system . . .

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UFT is one manufacturer who can offer a complete irrigation package — equipment designed to work together.

The UFT RAINMAKER traveling unit is a self-contained, chassis mounted model. It features a horizontally mounted hose reel, allowing the hose to be laid out from the front,rear, or either side. Power to the hose is supplied by connecting the unit to the tractor PTO.

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THE RAINMAKER is equipped with a 1400-foot cable and can be ordered with an optional 4⅛" or 4½" diameter, 660-foot nylon reinforced hose. One run will carry the unit approximately ¼ mile. Combined with a 330-foot circle of water, it will irrigate close to 12 acres in one pass. The speed can be varied to apply ½" to 3" of water per acre.

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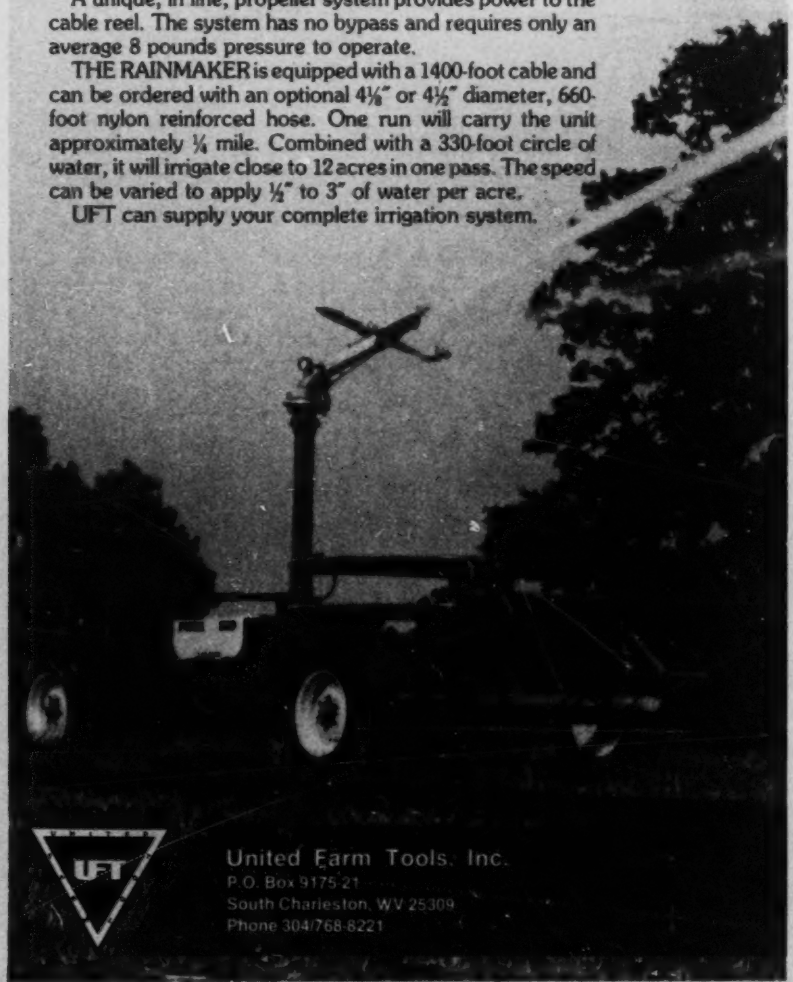

UFT

United Farm Tools, Inc.
P.O. Box 9175-21
South Charleston, WV 25309
Phone 304/768-8221

Circle (10) on Reply Card

European tractors

Fuel use in lbs/hp-hr, averaged by manufacturer for all tests in the 23-year period, showed Deutz scoring most efficient at both load levels. Other European-based lines posting high efficiencies were Belarus, Long and Hesston-Fiat.

Europeans have for many years paid much more for fuel than North Americans. European designers emphasized fuel efficiency a long time before the energy crunch hit this continent.

It is also inferred by some American tractor makers that foreign tractors generally lack the features found in their own models, even though most smaller tractors sold here are imports, regardless of brand.

We asked several manufacturers what is being sacrificed by European makers in performance or comfort to attain high fuel efficiency. The only specific answers were that "hydraulic systems may not be comparable to those of U.S. tractors" and "an air-cooled engine is inherently more efficient, but I suspect it costs more to produce than a liquid-cooled model."

Frank Kaplan, Deutz vice-president, marketing, says: "How does Deutz do it? Not by sacrificing comfort, convenience or performance, but by minimizing waste."

What next?

So where do we stand now? Tractor makers around the world are trying to improve fuel efficiency. They're also providing the comfort and performance features buyers want, even though many of these features consume engine power before it reaches the pto or drawbar.

The need for better fuel economy is obvious. An Oklahoma study

(More...)

"When you're testing a closed-center hydraulic system, you've got your hands full."

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On the inside, this meter's goof proof. Hook it into the system backwards — there's no damage to the meter. It simply warns you by refusing to react to the pressure control. But you'll hook it up right and the automatic pressure compensating feature will hold pressure steady as you change the rate of flow.

On the outside, this unit's built to take it. And the rugged roll-bar design beefs up its portability as much as its ability to take a punch.

Regardless of the type of equipment you're working on, OTC most likely has the fittings and accessories you'll need. Get full details: write OTC, see your parts jobber, or call toll free, 1-800-533-0492.

OTC

OWATONNA TOOL COMPANY
439 Nixon Street, Owatonna, MN 55060

Circle (12) on Reply Card

recently reported in *Successful Farming* indicates that fuel and lubricant costs increased from 25 to 34 per cent of total tractor costs from 1970 to 1980.

In the past, farmers have voted with their dollars for more features, but now fuel efficiency appears to be drawing more votes than before. IST

Industry in Motion

Chromalloy Farm Equipment Div., Kewanee, Ill., has appointed Ken Anderson, **Anderson Sales Co.**, Carrington, N.D., as a manufacturer's representative for its Kewanee, Schwartz and Arps product lines in North Dakota and northern Minnesota.

Dynamic Industries, Inc., Barnesville, Minn., has named Ken Bauer as in-plant sales manager.

Dale Stacker has been appointed district sales manager for **Badger Northland Inc.**, Kaukauna, Wis., and will oversee wholesale sales and direct dealer development and new dealer recruitment in central and eastern Ohio.

Gilson Brothers Co., Plymouth, Wis., has announced the acquisition of two product lines, portable heaters and high-pressure washers, formerly marketed by Century Engineering Div., Ex-Cell-O Corp., Cedar Rapids, Iowa.

The **Hub City Div., Safeguard PowerTech Systems**, Aberdeen, S.D., has announced the signing of an assembly/manufacturing license agreement with **S. E. Opperman, Ltd.**, London, England, which covers sales and marketing rights for the Poweratio I line of concentric shaft helical gear reducers.

Kohler Co., Kohler, Wis., has named James M. Roenitz as vice-president, generators, and George R. Tiedens vice-president, engine and advanced technology group. Arthur G. Kroos, Jr., general manager of the company's Engine Div., and a veteran of 43 years with Kohler, plans to retire in August of this year.

The business magazine of the farm & industrial equipment industry

August 1982
TWO DOLLARS

Implement & Tractor

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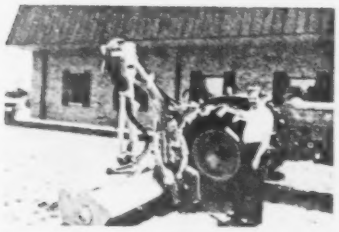

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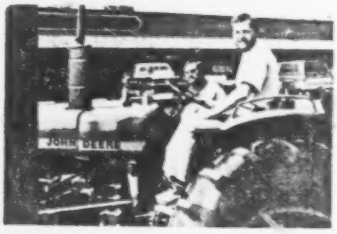

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10: **Cylinders and Motors in Performance.** Actuators function on very simple principles, but real-life conditions can affect their performance. This is the second article in our series on farm equipment hydraulics

16: **Working on Ads, Sales Promotion.** Wait Buescher, our sales commentator, tells how to find the optimum level of spending for ads and promotions to give your salesmen the backup they need.

20: **Are Your Shop's Key Profit Indicators Current?** Many dealers underestimate their shop expenses. Figuring your shop wage-shop rate ratio can help you evaluate your billing efficiency.

28: **Can a Dealer Make it as a Distributor?** Sonny Parsons grew gradually from a tractor retailer to a multistate distributor. I&T takes a look at how one dealer found his niche and expanded accordingly.

35: **Learning to Listen for Needs.** Two Oregon salesmen tell how their training in sales and in personal development paid off, both on and off the job.

On the cover... The mechanic's wages are one of the most clear-cut expenses in a shop – assessing the other expenses can be more difficult.

DEPARTMENTS

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What's Ahead...

August 1982

U.S. RETAIL SALES OF FARM EQUIPMENT IN JUNE continued their downward progression, according to the flash report of the Farm & Industrial Equipment Institute. The numbers:

	Unit Retail Sales					
	June			January-June		
	1982	1981	Pct. Change	1982	1981	Pct. Change
Farm Wheel Tractors:						
2-wheel drive						
40-100 hp	4,144	4,592	- 9.8	21,741	26,743	-18.7
Over 100 hp	2,163	2,853	-24.2	16,062	19,985	-19.6
Total 2-wheel drive	6,307	7,445	-15.3	37,803	46,728	-19.1
4-wheel drive	509	662	-23.1	3,771	4,750	-20.6
Total Tractors	6,816	8,107	-15.9	41,574	51,478	-19.2
Combines (S-P)	1,092	1,799	-39.3	4,649	7,713	-39.7
Balers*	1,777	2,670	-33.4	3,740	6,042	-38.1
Forage Harvesters**	580	809	-28.3	1,633	2,253	-27.5
Mower Conditioners	3,510	4,566	-23.1	7,100	9,501	-25.3

*Bales under 200 lbs. **Shear-bar type

THE AVERAGE NATIONAL SERVICE MANAGER now receives an annual salary of $37,073, according to a survey conducted by Dr. Steven Langer for the National Assn. of Service Managers. Similarly, the average (mean) salary of regional service managers is $24,206. Field service engineers average $22,212; for field service representatives, it's $19,489. The survey noted that salaries vary considerably from one type and size of employer to another. National service managers for lawn, garden and recreational equipment averaged $30,440. Those for manufacturers of all types with volume under $10 million averaged $30,250. Highest median salary is received by national service managers in direct service firms ($46,500) and manufacturing firms with annual sales of $250 million or more ($44,785).

THE INDUSTRIAL AND CONSTRUCTION EQUIPMENT DIV. of FIEI is going into show business. The division is taking over the International Construction & Utility Equipment Exposition, a bi-annual event most recently held at Olathe, Kan. Next one is set for Aug. 16-18, 1983, at Fairfax Airport, Kansas City, Kan. The show will feature working displays of products primarily for the telephone, power utilities, sewer, water, gas, CATV and street lighting markets. More details are available from Lynn Huffman, ICED manager at FIEI (312/321-1470).

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RETAIL SALES OF WHEEL TRACTORS*
(In Units)

	Total Wheel Tractors†				Cumulative for Jan.-May., 1981				Cumulative for Jan.-May., 1982			
	May 1981		May 1982		Farm Type				Farm Type			
	Farm	Non-Farm	Farm	Non-Farm	2-Wheel Drive	4-Wheel Drive	Total Farm	Non-Farm	2-Wheel Drive	4-Wheel Drive	Total Farm	Non-Farm
Alabama	140	33	84	36	795	18	813	143	481	8	489	106
Alaska	2	5	1	9	11	.....	11	20	7	.....	7	21
Arizona	39	23	23	21	294	26	320	152	208	38	246	163
Arkansas	199	36	154	20	1,142	164	1,306	154	749	72	821	97
California	306	170	266	91	1,707	178	1,885	950	1,262	96	1,358	428
Colorado	90	38	56	25	424	93	517	204	285	64	349	141
Connecticut	16	10	13	14	71	2	73	59	55	1	56	59
Delaware	15	2	3	5	54	2	56	11	44	4	48	17
Florida	164	90	135	41	948	24	972	465	762	18	780	262
Georgia	207	44	138	26	1,089	12	1,101	236	772	15	787	146
Hawaii	4	15	5	1	27	4	31	37	17	2	19	20
Idaho	114	12	75	10	598	98	696	69	360	73	433	44
Illinois	369	58	273	76	1,868	334	2,202	297	1,710	310	2,020	232
Indiana	247	43	197	28	1,018	159	1,177	163	814	168	982	114
Iowa	429	32	307	11	2,444	284	2,728	94	2,022	244	2,266	47
Kansas	233	21	155	8	896	195	1,091	136	922	214	1,136	70
Kentucky	298	33	228	31	1,536	26	1,562	206	1,315	8	1,323	119
Louisiana	237	69	152	39	1,180	114	1,294	313	746	33	779	246
Maine	29	5	21	3	101	3	104	29	107	1	108	15
Maryland	64	43	44	14	226	15	241	164	211	6	217	69
Massachusetts	15	24	9	13	57	.....	57	109	57	.....	57	92
Michigan	299	52	177	34	1,026	157	1,183	279	736	124	860	126
Minnesota	372	33	255	18	1,787	292	2,079	133	1,353	234	1,587	69
Mississippi	227	17	117	14	1,094	93	1,187	130	671	46	717	71
Missouri	361	46	229	29	1,276	124	1,400	201	1,111	104	1,215	131
Montana	96	10	116	7	340	113	453	62	324	115	439	53
Nebraska	274	13	136	9	1,222	126	1,348	55	1,117	118	1,235	45
Nevada	3	9	5	2	43	6	49	50	30	3	33	22
New Hampshire	15	9	20	6	35	.....	35	37	63	.....	63	30
New Jersey	22	50	16	27	97	.....	97	177	99	1	100	114
New Mexico	27	11	19	3	151	14	165	105	164	4	168	37
New York	280	63	133	65	892	74	966	299	651	48	699	248
North Carolina	193	41	180	43	1,193	16	1,209	227	1,006	15	1,021	150
North Dakota	218	9	188	9	761	375	1,136	30	694	371	1,065	46
Ohio	311	56	178	30	1,289	161	1,450	282	894	98	992	144
Oklahoma	250	46	122	58	788	107	895	294	747	90	837	342
Oregon	137	33	77	9	457	46	503	144	390	43	433	40
Pennsylvania	197	85	139	52	815	34	849	368	683	18	701	216
Rhode Island	5	.....	2	3	10	.....	10	16	6	.....	6	8
South Carolina	87	30	66	17	465	12	477	143	364	6	370	92
South Dakota	94	5	83	1	537	113	650	28	546	90	636	23
Tennessee	276	21	141	23	1,132	31	1,163	134	896	21	917	131
Texas	800	294	533	204	3,549	205	3,754	1,476	3,070	128	3,198	1,145
Utah	63	14	25	14	274	14	288	119	186	8	194	81
Vermont	32	5	24	5	115	1	116	23	83	7	90	15
Virginia	163	37	119	31	677	10	687	190	617	14	631	106
Washington	139	44	103	13	580	80	660	152	508	56	564	79
West Virginia	42	9	21	6	140	.....	140	56	125	.....	125	23
Wisconsin	509	38	233	23	1,778	115	1,893	171	1,225	99	1,324	135
Wyoming	35	12	21	13	171	18	189	82	109	26	135	53
U.S. Government	2	4	1	1	6	.....	6	37	3	.....	3	12
Miscellaneous‡	2	88	15	33	97	.....	97	313	119	.....	119	250
TOTAL	**8,748**	**1,990**	**5,833**	**1,324**	**39,283**	**4,088**	**43,371**	**9,826**	**31,496**	**3,262**	**34,758**	**6,545**

Data released July 21, 1982, Farm & Industrial Equipment Institute.

*Figures do not include garden tractors, motor tillers or contractors off-highway types. Report includes units marketed by these firms: Allied Farm Equip. (Leyland Satoh); Allis-Chalmers; Belarus; J I Case; Deere; Deutz; Ford; International Harvester; Long; Massey-Ferguson; R. M. Wade (Satoh); Steiger; Versatile; and White.

†The monthly sales are those reported for that month only. The cumulative totals are subject to revision reflecting updating in the basic sales data.

‡Sales reported as miscellaneous are retail sales which cannot be classified by state or as U.S. Government. They include sales and dispositions that do not go through usual marketing channels such as gifts to non-profit organizations, intra-plant or company transfers, etc.

RETAIL SALES OF SELECTED FARM EQUIPMENT – Jan.-May, 1981 and 1982(1)
(In Units)

	Combines Self-Propelled		Corn Heads		Hay Balers(2)		Windrowers Self-Propelled: Power Units		Windrowers Self-Propelled: Total Heads		Grinder-Mixers		Shear-Bar Forage Harvesters(3)	
	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982	1981	1982
Alabama	41	19	5	3	83	30	.....	1	....	1	46	29	14	5
Alaska	.....	.....	.....	.....	5	4	.....	.....	.....	.....	1	.....	.....	.....
Arizona	43	19	1	5	29	5	33	9	39	10	2	5	7	5
Arkansas	220	70	1	3	96	24	.....	.....	.....	.....	30	25	3	2
California	120	66	19	13	81	49	147	71	163	85	3	3	26	11
Colorado	89	68	22	41	58	57	42	23	44	25	37	14	8	10
Connecticut	.....	.....	.....	.....	10	6	.....	.....	.....	.....	.....	1	6	6
Delaware	6	5	4	2	3	4	1	.....	1	.....	2	3	1	1
Florida	12	16	8	6	27	18	.....	.....	.....	.....	8	3	5	12
Georgia	100	86	30	21	76	53	.....	.....	.....	....	51	51	21	13
Hawaii	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Idaho	103	43	1	2	98	50	76	34	76	41	16	13	11	5
Illinois	553	363	471	385	78	51	7	.....	7	– 1	217	135	74	35
Indiana	284	156	263	154	69	37	2	.....	2	.....	137	100	34	25
Iowa	550	389	517	403	79	52	45	17	43	21	493	387	93	61
Kansas	553	372	35	32	96	77	102	58	105	63	97	89	32	38
Kentucky	72	28	43	24	80	42	8	2	7	1	116	117	48	21
Louisiana	73	32	1	1	36	13	.....	.....	.....	.....	5	2	4	4
Maine	.....	.....	.....	.....	9	4	.....	1	.....	1	1	1	5	4
Maryland	17	12	27	15	26	17	1	5	1	6	17	14	13	9
Massachusetts	.....	.....	.....	.....	8	7	.....	.....	.....	.....	.....	1	4	2
Michigan	102	49	76	65	46	34	17	3	16	3	109	83	64	30
Minnesota	333	232	213	171	152	95	110	73	119	83	299	220	122	89
Mississippi	102	30	2	1	55	27	.....	1	.....	1	20	15	8	7
Missouri	229	125	66	57	146	73	18	7	19	7	181	152	34	30
Montana	135	83	2	.....	42	25	66	50	73	61	23	21	4	4
Nebraska	276	251	175	153	41	22	76	57	80	65	193	188	45	51
Nevada	1	.....	.....	.....	6	8	14	4	15	8	2	.....	1	.....
New Hampshire	.....	.....	.....	1	12	6	.....	.....	.....	.....	1	.....	2	4
New Jersey	5	1	5	3	7	13	.....	.....	.....	.....	6	6	3	2
New Mexico	17	5	1	2	45	40	20	13	20	11	6	2	1	5
New York	17	24	27	27	90	81	9	6	10	6	61	41	71	76
North Carolina	54	35	47	39	96	47	.....	.....	.....	.....	64	40	13	15
North Dakota	295	187	11	24	9	7	74	51	82	51	66	48	10	8
Ohio	223	86	188	105	109	90	2	3	2	3	150	108	57	37
Oklahoma	257	202	1	7	167	68	48	34	50	42	41	49	8	2
Oregon	62	26	2	4	82	49	39	29	59	31	11	7	13	7
Pennsylvania	35	28	29	25	143	110	16	11	15	11	119	125	94	68
Rhode Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....
South Carolina	36	16	6	8	33	21	.....	.....	.....	.....	20	13	10	3
South Dakota	104	60	41	36	9	6	70	60	77	75	109	105	36	29
Tennessee	69	34	16	11	170	66	.....	.....	.....	.....	75	80	40	25
Texas	494	218	51	38	314	132	38	20	48	24	87	89	20	13
Utah	10	6	1	.....	42	44	24	16	22	18	7	5	4	7
Vermont	.....	2	.....	3	20	4	1	.....	1	.....	1	.....	13	29
Virginia	26	20	18	19	88	59	2	3	2	3	30	46	31	29
Washington	97	30	8	2	54	44	40	10	46	11	8	5	25	20
West Virginia	.....	1	.....	.....	35	19	.....	.....	.....	.....	8	10	2	3
Wisconsin	81	53	90	83	291	153	69	44	72	47	255	187	301	189
Wyoming	18	8	3	2	21	20	25	12	26	18	9	7	3	2
U.S. Government	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Miscellaneous (4)	.....	.....	12	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....
TOTAL	**5,914**	**3,557**	**2,539**	**1,996**	**3,372**	**1,963**	**1,242**	**720**	**1,342**	**833**	**3,238**	**2,645**	**1,444**	**1,053**

Data released July 21, 1982, Farm & Industrial Equipment Institute.

(1) Includes revisions for prior months.
(2) For making bales of under 200 lbs.
(3) Pull-type, mounted, self-propelled.
(4) Sales reported as miscellaneous are retail sales which cannot be classified by state or as U.S. Government. They include sales and dispositions that do not go through usual marketing channels such as gifts to non-profit organizations, intra-plant or company transfers, etc.

Mower Conditioners All Types 1981	1982	Manure Spreaders Conveyor-Type 1981	1982	
57	29	8	1	Alabama
2	2	2	.....	Alaska
7	2	2	2	Arizona
167	82	56	41	Arkansas
27	12	26	21	California
36	19	32	24	Colorado
10	17	40	48	Connecticut
1	6	33	11	Delaware
21	23	12	7	Florida
88	66	15	12	Georgia
.....	1	.....	.....	Hawaii
37	12	58	57	Idaho
191	157	308	276	Illinois
149	76	282	201	Indiana
271	158	753	754	Iowa
201	177	80	99	Kansas
267	176	156	148	Kentucky
27	20	9	8	Louisiana
16	8	32	35	Maine
20	28	87	85	Maryland
12	9	43	24	Massachusetts
106	63	376	288	Michigan
229	151	641	666	Minnesota
41	25	12	9	Mississippi
381	271	150	148	Missouri
38	19	13	23	Montana
132	135	107	202	Nebraska
2	2	2	8	Nevada
14	7	21	24	New Hampshire
4	10	23	21	New Jersey
6	4	4	2	New Mexico
174	125	700	637	New York
84	81	53	65	North Carolina
15	19	41	39	North Dakota
172	132	419	324	Ohio
228	173	17	25	Oklahoma
61	25	41	45	Oregon
156	195	606	516	Pennsylvania
.....	.....	.....	2	Rhode Island
48	38	7	12	South Carolina
24	19	105	112	South Dakota
252	235	79	65	Tennessee
409	245	82	66	Texas
34	32	46	44	Utah
25	19	101	96	Vermont
157	169	82	109	Virginia
55	30	50	50	Washington
29	27	34	23	West Virginia
442	255	993	924	Wisconsin
10	4	15	17	Wyoming
.....	.....	.....	.....	U.S. Government
.....	.....	.....	.....	Miscellaneous
4,935	**3,590**	**6,854**	**6,416**	**TOTAL**

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LANAIR™

Circle (13) on Reply Card

AUCTION PRICES OF USED EQUIPMENT

An exclusive I&T monthly report of actual prices paid recently at these leading national wholesale auctions.

Asterisk beside tractor price indicates highest bid offered on tractors which were not sold.

JONES FARM EQUIPMENT CO.
Dothan, Alabama
June 8, 1982

ALLIS-CHALMERS TRACTORS

175 diesel, 1971 (Rough) 2200
C, mo., 1944 (Fair) 325
G, cult., 1950 (Good) 1000

CASE TRACTORS

970 diesel, duals, 1970 (Fair) 2950
580 diesel, ldr., backhoe, 1969 (Excellent) 6000*
580 diesel, ldr., backhoe, 1969 (Excellent) 6000
580 diesel, ldr., backhoe, 1969 (Good) 5500*
530 diesel, 1963 (Fair) 525
480 C-diesel, loader, backhoe, 1976 (Excellent) 11,250

DAVID BROWN TRACTOR

880 diesel, 1966 (Rough) 425*

MASSEY-FERGUSON TRACTORS

275 diesel, 1975 (Good) 6200
245 diesel, 1976 (Excellent) 5900
205 diesel, 4-WD 1981 (Excellent) 4850
180 diesel, 1969 (Good) 3250
180 diesel, 1968 (Good) 2350*
180 diesel, 1967 (Good) 3300*
180 diesel, 1965 (Good) 3100*
175 diesel, 1967 (Good) 3600*
175 diesel, 1966 (Rough) 2150
165 diesel, 1969 (Fair) 3250
165 diesel, 1966 (Rough) 2550*
135, diesel, 1967 (Good) 3000*
135, 1966 (Rough) 1950
135 diesel, 1966 (Fair) 2400*
135, 1965 (Good) 3050
50 LP, 1958 (Fair) 1275
35 diesel, 1963 (Good) 2150*
35 diesel, 1963 (Fair) 1750
35, 1961 (Good) 2150
35 diesel, 1958 (Rough) 900
35, 1957 (Fair) 1425
35, 1957 (Fair) 1375*
T020, 1950 (Rough) 625
T020, 1950 (Rough) 550*

FORD TRACTORS

8600 diesel, 1974 (Good) 5750
8000 diesel, 1969 (Fair) 3600*
7600 diesel, 1978 (Good) 7800*
7600 diesel, 1976 (Good) 7300
7000 diesel, 1978 (Good) 7200*
5000 diesel, cab, duals, 1972 (Fair) 3600
5000 diesel, 1972 (Rough) 3300*
5000 diesel, 1970 (Fair) 3600
5000 diesel, 1970 (Good) 4300
5000 diesel, 1968 (Rough) 2250
4000 diesel, 1972 (Excellent) 5000
4000 diesel, 1966 (Fair) 2500
3000 diesel, 1968 (Good) 3150*
3000 diesel, 1966 (Good) 3100*
3000 diesel, 1966 (Good) 2875
1801 diesel, ldr., 1958 (Rough) 1250
1700 diesel, 1980 (Excellent) 4400*
850, 1955 (Good) 2100*
841, 1961 (Fair) 1250
841, 1958 (Good) 2275
650 diesel, ldr., 1975 (Excellent) 6750
641, 1961 (Good) 1975
641 diesel, 1958 (Fair) 1500
631, 1959 (Good) 1600*
Sup. Dexta 1963 (Good) 1275
Sup. Dexta 1963 (Excellent) 2000
Dexta, 1959 (Good) 1500*
NAA, 1954 (Fair) 1400*
Jub., 1953 (Good) 1700*
8N, 8-cyl, 1952 (Fair) 650*
8N, 1952 (Good) 1175*
8N, 1951 (Good) 1050
8N, 1951 (Good) 1025
8N, 1951 (Good) 1150*
8N, 1951 (Good) 1250*
8N, 1950 (Good) 975
8N, 1950 (Good) 1200
8N, 1949 (Good) 975
8N, 1948 (Fair) 800*

FORD-FERGUSON TRACTORS

9N, 1946 (Good) 925
9N, 1944 (Rough) 410

INTERNATIONAL HARVESTER TRACTORS

1466 diesel, duals, 1972 (Good) 7500*
1466 diesel, 1972 (Fair) 4700*
1256 diesel, duals, 1968 (Fair) 3900
1086 diesel, 1977 (Good) 7150
1066 diesel, duals, 1974 (Good) 5800
966 diesel, duals, 1971 (Good) 8000*
2500 diesel, 1972 (Fair) 1250
2500 diesel, 1972 (Fair) 1250
2500 diesel, 1972 (Fair) 1400
2400 diesel, ldr., 1971 (Fair) 2200*
664 diesel, 1973 (Fair) 2350*
2606 diesel, 1965 (Rough) 1000
574 diesel, 1974 (Good) 3600
560 diesel, 1959 (Rough) 625
504 diesel, 1965 (Excellent) 2600

(More...)

DT-27 shown with scissor adaptor to support axle housing.

Safety Versatility Time

Three good reasons to have Cofer Tire Carts in your shop

Model T-21
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- 6" casters
- with or without axle housing
- 6,000 lb. capacity

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- 6" casters
- telescoping legs
- adjustable tire support
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Circle (19) on Reply Card

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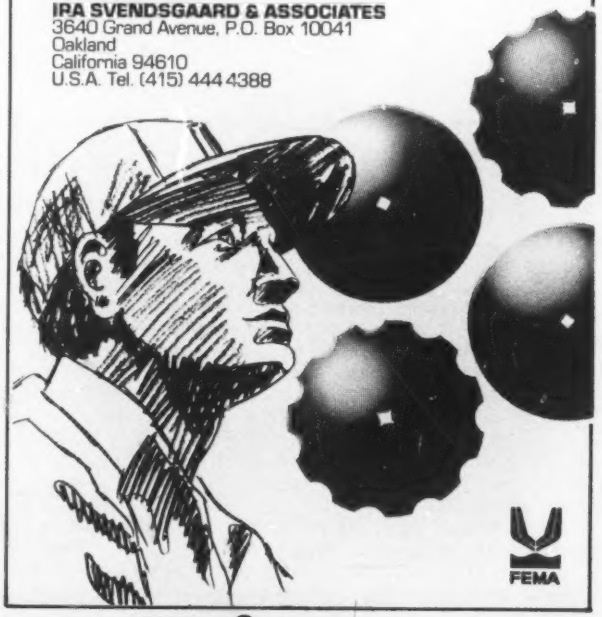

Circle (20) on Reply Card

Auctions
(continued)

460 diesel, ldr., 1960 (Good) 1900*
200, plow, 1955 (Good) 800*
140, 1970 (Good) 1650
140, mo., 1963 (Good) 2200
Sup. A., ldr., 1952 (Good) 1300*
A, mo., 1944 (Fair) 350
Cub, cult., plt, mo, 1948 (Good) 1250

JOHN DEERE TRACTORS

4020 diesel, 1971 (Fair) 3800*
4020 diesel, cab, 1968 (Good) 5500
3020 diesel, 1965 (Good) 4500*
3010, 1963 (Rough) 1550
3010 diesel, 1962 (Good) 2550
2640 diesel, 1976 (Excellent) 7600
2630 diesel, 1975 (Good) 5750
2030 diesel, 1973 (Good) 4000
2010, 1961 (Good) 1400*
320, 1957 (Good) 1150
310 diesel, ldr., backhoe (Excellent) 8500*
40, 1953 (Fair) 500
G,. 1950 (Good) 525*
MT, plow, 1952 (Excellent) 825*
M, cult., plt., 1952 (Good) 925

LONG TRACTOR

560 diesel, (Good) 3000

OLIVER TRACTORS

1755 diesel, 1973 (Good) 4000
1650 diesel, 1964 (Fair) 2050
1550 diesel, ldr., 1967 (Excellent) 4500
550 diesel, 1963 (Excellent) 2000
55 diesel, 1955 (Excellent) 1650

YODER & FREY, INC.
Archbold, Ohio
June 8, 1982

INTERNATIONAL HARVESTER TRACTORS

A, 1950 (Rough) 400*
A, plow, 1949 (Fair) 800*
A, 1950 (Fair) 1000
Cub, mo., ... 1125
Cub, mo., 1955 (Rough) 1200*
Cub, plow, cult., tiller 725
Cub, cult., 1953 (Rough) 1175*
154 Loboy, ... 2700
C, 1950 (Rough) 695
H, cult., 1950 (Good) 920
H, 1947 (Rough) 530
H, 1950 (Rough) 475*
H, 1950 (Good) 570
H, cult., ... 300
M, 1949 (Rough) 725*
M, 1950 (Rough) 550*
M, 1950 (Rough) 850
M, 1949 (Rough) 550
Sup. M, 1952 (Good) 1075
140, (Fair) 2900
230, 1961 (Rough) 675*
340, 1962 (Rough) 1200
350, ... 420
400 diesel, 1957 (Fair) 925
434, (Fair) 2550
450, 1957 (Good) 1850
454, ldr., 1974 (Fair) 5000*
460, 1959 (Good) 1770*
460 diesel, 1961 (Fair) 1440*
460, 1960 (Good) 1375
560, 1960 (Rough) 2200*
656, ldr., 1970 (Rough) 3100*
656, 1968 (Fair) 3125*
706, 1965 (Fair) 2850
766, 1975 (Fair) 6250*
766, 1975 (Good) 8350*
806 diesel, 1965 (Fair) 3250*
806 diesel, 1965 (Fair) 4500
806, 1964 (Fair) 3000
826, 1970 (Fair) 4950*
856, 1970 (Good) 4600*
986, 1979 (Good) 15,500*
1066, 1974 (Good) 7200*
1206 diesel, 1965 (Good) 6400*
1256 diesel, 1968 (Fair) 5700*
1456 diesel, 1970 (Rough) 4850*
1466, 1975 (Fair) 5500*
1466 diesel, 1975 (Good) 9250*
1466 diesel, 1975 (Fair) 5100
1466 diesel, 1976 (Fair) 6750*
1468, 1975 (Good) 5300*
1566, 1974 (Good) 9250*
1586 diesel, 1978 (Good) 14,500*
3788, ... 29,500*

JOHN DEERE TRACTORS

L, ... 650*
40, cult., 1955 (Good) 1350
620, 1959 (Good) 2250
730 diesel, 1958 (Fair) 1900*
1010, 1962 (Rough) 1700
2010, 1961 (Rough) 1350*
2010, 1961 (Rough) 1235
2010, ldr., 1963 (Fair) 2950
2510, (Good) 4700
3010, 1963 (Rough) 1800*
3010 TBL, ... 4400
3020, 1966 (Fair) 3100*
4010, (Good) 2600*
4020, 1967 (Fair) 4800*
4020 diesel, 1966 (Fair) 4700*
4020 diesel, 1966 (Fair) 5700*
4020 diesel, 1965 (Fair) 5500*
4020 diesel, 1966 (Fair) 4500
4020, 1965 (Rough) 3250*
4020, 1966 (Fair) 3400
4020, (Good) 2500
4320, 1971 (Good) 9100*
4430 diesel, 1974 (Good) 13,000*
4430, 1975 (Good) 13,000*
4440, 1979 (Fair) 17,800
4520, 1970 (Good) 6400*
4630 diesel, 1977 (Good) 11,500*
4630 diesel, 1976 (Good) 13,500*
4630, 1974 (Good) 11,000*
5020 diesel, 1968 (Fair) 5500*
8440, 1980 (Excellent) 35,500*

CASE TRACTORS

V, 1947 (Fair) 425
VAC, ... 460
530, 1965 (Fair) 2850*
800, (Rough) 1200*
830 diesel, 1967 (Rough) 1325
830, 1957 (Fair) 1300*
830, 1967 (Fair) 2500*
830 diesel, 1966 (Good) 2400
930 diesel, 1966 (Fair) 3500
930, 1968 (Good) 2450
1270 diesel, 1971 (Fair) 9200*
1270 diesel, 1973 (Fair) 8000*

MASSEY-FERGUSON TRACTORS

Sup. 90, 1959 (Fair) 2300*
135, mo., 1967 (Rough) 2175*
135, mo., 1968 (Rough) 2350
165, 1969 (Fair) 3675
165, 1972 (Fair) 2850
165, 1970 (Good) 3350
165, 1971 (Fair) 3000
165, 1971 (Good) 3625
165, 1968 (Rough) 3550
175 diesel, 1970 (Fair) 3750*
175, 1969 (Rough) 3300
175 diesel, 1967 (Fair) 3250*
245, ... 7750
1080, 1970 (Good) 5300
1085 diesel, 1977 (Fair) 7100*
40, ldr., 1975 (Fair) 4650
70, hoe, ldr., ... 7500*
255 diesel, 1977 (Rough) 4800
25, 1963 (Fair) 2200*

DU-AL 800 15 TON SPREADER

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The new **DU-AL 800 SPREADER** is ideal for use in commercial feedlots. But the medium-size dairy, beef, hog and poultry operator will also appreciate DU-AL's rugged construction and quality features — 15-ton capacity, variable speed hydraulic apron with oversize motor and gear box, easy removal of FAST-D-TACH beater assembly without bolts or tools, double aprons with 24,500 lb. per strand tensile strength pintle chain, high flotation 15 x 22.5 tires with tandem oscillating running gear for good ground clearance — important in rough field conditions, heavy duty 27" diameter main beater with 16 replaceable (rooster comb) paddles, easy access to all components in the drive line. DU-AL also offers the same quality construction in its 205 bushel spreader, 312 bushel spreader, line of loaders, sub-soilers and dump wagon.

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ALLIS-CHALMERS TRACTORS

C, 1948 (Rough) 525*
CA, 1952 (Fair) 1150
WD, 1949 (Fair) 600*
WD-45, ldr., 1952 (Fair) 860
D-14, 1965 (Fair) 1350
D-17, ldr., 1964 (Fair) 1700*
D-21, 1967 (Fair) 4250*
185 diesel, 1973 (Fair) 7100
190XT, 1971 (Fair) 4600
200 diesel, 1973 (Fair) 6800*
210 diesel, 1972 (Fair) 5000*

FORD TRACTORS

8N, 1952 (Fair) 1330
8N, ... 725
9N, 1947 (Fair) 900
9N, 1945 (Fair) 800
6000 diesel, 1963 (Fair) 3100*
640, mo., 1957 (Fair) 1675
Jub., ldr., ... 1450
8600, 1974 (Fair) 6500*
641, 1957 (Good) 2050

OLIVER TRACTORS

88 Sup., 1962 (Fair) ..... 4[illegible]10
1600, 1961 (Rough) 1250*
1600, ldr., 1962 (Fair) 3100*
1750 diesel, 1966 (Fair) 2700*
1750 diesel, 1965 (Rough) 2425
1755, 1972 (Good) 4500
1855, 1973 (Fair) 4400*
1950, 1966 (Fair) 4200*

WHITE TRACTOR

4-150, 1974 (Rough) 10,250*

DAVID BROWN TRACTORS

995, 1978 (Good) 4750*
1200, (Rough) 2300*
1200, (Fair) 2950

MINNEAPOLIS-MOLINE TRACTORS

Jet Star 5, (Rough) 850*
335, (Rough) 775*
G-1000 diesel, (Fair) 3050*
A4T-1600, (Rough) 7200*

COCKSHUTT TRACTORS

E3, 1949 (Fair) 350*
E3, 1948 (Rough) 525

NOTES

Prices reported are for individual sales at wholesale on "as is," "cash and carry" basis.
Prices reported are NOT averages.

Condition classifications: EXCELLENT means—Engine: in perfect condition, 400 to 600 hours of use; Rubber: 80% tread remaining, no breaks or cracks; Paint: original and bright; General Appearance: excellent.

GOOD means—Engine: good running condition; Rubber: 70% tread remaining, no breaks or cracks; Paint: original paint or a good repaint job; General Appearance: good over-all.

FAIR means—Engine: possibly in need of a minor overhaul to restore; Rubber: 60% tread remaining, some cracking evident in side walls; Paint: only fair, weathered and some rust apparent; General Appearance: worn, some dents, minor parts such as gage covers missing or broken.

ROUGH means—Engine: obviously in need of a major overhaul; Rubber: smooth; Paint: scarred, weathered, rusty, needs painting urgently; General Appearance: dents, ruptures, broken parts, loose wires, some components such as lights broken, missing or inoperative.

DEMONSTRATOR means—used for demonstrating only and in practically new condition.

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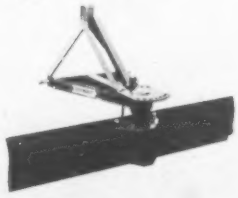

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Circle (24) on Reply Card

implement & tractor

3 Locations, 10 Salesmen, 1 Big Inventory: HOW WOULD YOU MANAGE IT ALL?

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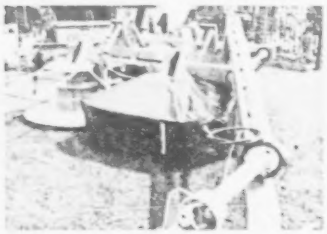

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8: **Service Department Expense Allocation.** Shop losses can be caused by not recognizing the overhead expenses involved. Here's what to look for.

12: **A Long, Royal Look at British Products.** British agriculture pulls out all the stops for the Royal Show. I&T reviews the show and some of the products on display.

16: **The DLG/Western Canada.** I&T takes a quick look at West Germany's DLG and the Western Canada Farm Progress Show.

36: **Pumps – Energy Input Devices.** Melvin E. Long discusses pump types, ratings, efficiencies and problems. The third article in the series on farm equipment hydraulics.

44: **It's Been 75 Years for ASAE.** This group of ag engineers celebrated their Diamond Jubilee with a convention on the theme "Food, Fiber, and the Future."

44: **New Engine Design Methods, Dual Fueling of Diesels.** Frank Buckingham examines two new developments presented at the ASAE convention.

46: **Deere Introduces the 1983 Line.** I&T Red Book Editor, Chuck McMurray, reports on the latest products from John Deere.

48: **Selling from One Big Inventory.** With 10 salesmen at three locations, Adrian and Jim Sommer have one of the largest Case dealerships anywhere. For them, sales management is a top priority.

On the cover... It's a big inventory, but with 10 salesmen at three locations, Adrian and Jim Sommer find it just about right for Service Motor Co.

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What's Ahead...

September 1982

U.S. RETAIL SALES THROUGH JULY as reported in FIEI's flash report:

	Unit Retail Sales					
	July			January-July		
	1982	1981	Pct. Change	1982	1981	Pct. Change
Farm Wheel Tractors:						
2-wheel drive						
40-100 hp	3,710	5,723	-35.2	25,399	32,466	-21.8
Over 100 hp	2,563	4,848	-47.1	18,623	24,833	-25.0
Total 2-wheel drive	6,273	10,571	-40.7	44,022	57,299	-23.2
4-wheel drive	425	1,014	-58.1	4,195	5,764	-27.2
Total Tractors	6,698	11,585	-42.2	48,217	63,063	-23.5
Combines (S-P)	1,433	2,954	-51.5	6,081	10,667	-43.0
Balers*	2,388	3,192	-25.2	6,169	9,234	-33.2
Forage Harvesters**	605	858	-29.5	2,242	3,111	-27.9
Mower-Conditioners	2,985	3,363	-11.2	10,097	12,864	-21.5

*Bales under 200 lbs. **Shear-bar type.

CANADIAN RETAIL SALES THROUGH JULY were in similar condition: Tractors off 30 per cent at 9,790 units; self-propelled combines off 68 per cent at 355; mower-conditioners off 37 per cent at 1,700 units; round balers off 39 per cent at 1,097; rectangular balers off 38 per cent at 1,233 units.

U.S. TRACTOR AND FARM EQUIPMENT EXPORTS in the first half of 1982 were off 12.3 per cent from the first half of 1981 at $1.361 billion. Major areas of sales decline were Canada (off 18 per cent at $615 million), Mexico (off 25 per cent at $96.6 million), Britain (off 10 per cent at $40.5 million), Belgium (off 38 per cent at $41.2 million) and Venezuela (off 18 per cent at $29.4 million). Business picked up for U.S. exporters in West Germany (up 54 per cent at $48 million), France (up 20 per cent at $70 million), Saudi Arabia (by 45 per cent at $29.6 million) and Australia (by 39 per cent at $137 million). Tractor exports declined by 34 per cent to 10,580 units; dollar volume was off 23 per cent at $318 million. Tractor parts exports were off 7 per cent at $358 million.

TRACTOR AND FARM EQUIPMENT IMPORTS were also down in the first six months--from $846.5 million in 1981's first half to $685.6 million, a 19 per cent decline. Imports were off 20 per cent from Canada to $299 million, by 45 per cent from Britain at $51 million, by 7.6 per cent from West Germany at $97 million, by 41 per cent from Belgium at $19 million, by 28 per cent from France at $18 million and by 7 per cent from Japan at $101 million. Tractor imports declined in dollar volume by 17 per cent to $265 million from $321 million. Unit totals were off about 15 per cent to 36,843. Tractor parts imports were down by 31 per cent to $116 million.

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Editor's Notebook

Hay Tools And 'Full-Line' Companies

By now, you've probably heard: International Harvester has sold the patents, designs and tooling for mowers, mower-conditioners and rectangular balers to Avco New Idea for cash. Some IH designs for new products in advanced stages of development are included.

Avco New Idea will make these products at Coldwater, Ohio, and IH will market them through its dealer organization, painted IH red, along with ANI's round balers and rakes, also painted IH red. Avco will also sell these products through its own marketing organization using its own colors.

IH had been making the rectangular balers and mowing tools at its Memphis plant, which it is closing. It will continue to make forage harvesters and windrowers at its Hamilton, Ont., plant.

It's another chapter in IH's struggle to survive. IH aims at narrowing the scope of its operations to a producer of trucks, engines and ag equipment in North America, and to making only ag lines and engines in Europe. Other parts of the plan include closing the Louisville components plant (but keeping the Louisville foundry) and selling the Canton, Ill., implement plant.

The deal with Avco may have been brought on by Harvester's financial strife, but I think something like it might have happened sooner or later anyway. With the exception of Deere, none of the companies in this business which we used to call "full-line" now make more than a few hay tools. Most of them don't make any, and market a few, or they have long since gracefully withdrawn from the race.

The race is thus pretty much left to the hay tool specialists: Sperry New Holland, Hesston, Avco New Idea, Owatonna, Gehl, Farmhand (listed in no particular order) and a host of smaller companies whose hay specialties are even shorter.

The evolution we've been seeing shouldn't be surprising. After all, hay is the one crop that's grown in just about all areas of the U.S. But it is grown differently, to some extent, just about everywhere you go. Or it's handled and used differently.

Thus, hay tools are one of the product families of farm equipment that proliferate in types, varieties and manufacturing companies. For instance, you may be able to tick off the names of everyone making a big baler, but who can possibly identify all the companies that have products for handling big bales?

Back in 1963, when I attended my first FIEI Marketing & Management conference, Dr. E. G. McKibbon, then director of the USDA's ag engineering research division, said something that has stuck with me:

"You must supply the best possible equipment for the production of a certain crop in a specific field of a particular farm in a given region—a difficult task conflicting with volume production and universal distribution, but one which will become increasingly justified."

He knew what he was talking about, didn't he! His vision of the farmer with ever-more-specialized demands and the market clout to get what he wants was prophetic, and this has led to many ramifications that would have been disbelieved 19 years ago.

For instance, in 1971, Harold Halter, then and now executive vice-president of the Farm Equipment Manufacturers Assn., had about 250 regular members and he was predicting a maximum of around 350 companies. But today, there are about 450 companies in that organization, despite the attrition you might expect from mergers, business failures and company shifts into other industries.

The reason is that new companies arise to fill newly created demands in farm mechanization. It's not a matter of scrambling for market share. Instead, they are filling voids that were previously irrelevant or non-existent but are suddenly important. Companies already in the business either don't see the new opportunities or are otherwise committed in other directions.

Back to hay tools: It has been a long time since the full-line companies were involved in major technological innovations in that product category. But they do play an important role in the creative financing of hay and other machines, and they have dealer organizations. If it weren't for these factors, perhaps the small companies would have blown the bigger ones away a long time ago.

If it's true for hay tools, it would seem to be true for tillage equipment, too. With all the specific, refined demands placed by farmers for equipment to work their fields just the way they want them, how can a full-line company offer much more than a good average implement, useful in many (but far from all) situations?

How Many Dealers Out? How Many Are Still In?

Here's the latest report from the Farm Equipment Manufacturers Assn. about retail dealer attrition. FEMA has again surveyed managers of the regional dealer associations in North America

(More...)

concerning the number who have dropped out, whether through bankruptcy or their own choice.

FEMA presented the following table in its member newsletter dated August 1, based on reports from 26 associations:

	1981	Jan.-June 1982
Allis-Chalmers	41	18
J I Case	27½	16
John Deere	27½	12
Ford Tractor	59	23
International Harvester	105	50
Massey-Ferguson	62	50
White Farm	30	12
Shortlines	29	23
Not Identified	36	17
Others	9	8
Totals	426	229

Two weeks later, the FEMA newsletter had some additional data. Four more associations had reported in. One, Alberta-British Columbia, had lost three but gained five in the period for a net increase of two. But offsetting this were three other associations reporting 20 more dealers out of business. Of the 249 net decline, 30 were bankruptcies. According to FEMA, 42 per cent of the total dealers out of business were either IH or Massey-Ferguson.

When I&T got the data from the FEMA newsletter, we asked the public relations offices of the named companies if they wanted to comment. At press time, two had declined comment and we hadn't heard from the others.

What's the universe? At this point, let's take a look at what appears to be the total number of farm and industrial equipment dealers in North America. Then we can judge what kind of attrition rate the FEMA survey discloses.

First, at the NFPEDA convention in Honolulu last month, I was given a list that showed as of June 1 a total of 8,662 paid dealer members among the 29 U.S. associations in the federation. In addition, there are approximately 1,200 to 1,250 Canadian dealers who are members of regional and provincial associations.

This gives us a total of about 9,900 dealers, paid up as of three months ago, right?

Well, almost. It happens that the way things are structured, some regional associations don't report *all* their paid memberships to NFPEDA, at least not right away. So we may have at any given time a few score or maybe a couple of hundred uncounted dealers floating around out there in addition to the ones we know about. So let's estimate 10,000, just to be conservative.

And then there are rules, which vary by association, concerning multiple-location dealerships. One association I know of can point to a few examples of dealers who have three fully operative dealerships with separate supplier contracts, but they are counted as only one member. But that may not be the way it's done in the adjoining state or provincial association.

Another complication: We don't know how many of the dealer-members counted among the paid-ups or among the dropouts are lawn and garden equipment dealers. Some associations have a fair number of such establishments on their rosters; others don't.

And finally, how precise and uniform are the responses to the survey? What if Company A and Company B each have a dealer in a town. Company A's dealer decides to hang it up. Company A's territory manager walks across the street and offers the A franchise to the dealer for Company B, who accepts, keeping the B line. Both companies still have the same number of dealers, but the association has one less member.

But what the heck. Let's say there are 10,000 farm and/or industrial equipment dealerships out there. If there were 426 dropouts in 1981 and another 249 in the first half of this year, I'd say, as does FEMA's Harold Halter, that a decline of 675 dealers is a relatively small percentage, considering how difficult business conditions have been in the past 18 months.

News Briefs

Florida Dealer Wins Grant From NFPEDA Fund in Litigation vs. Ford Tractor

Upon recommendation by its Industry Relations Committee, the board of directors of the National Farm & Power Equipment Dealers Assn. has voted to grant money from NFPEDA's Industry Relations Fund to Hinton James, Jr., dealer principal of Polk Tractor Co., Winter Haven, Fla.

Monies from the fund are granted to individual dealers who are engaged in litigation with manufacturer-suppliers. The Industry Relations Committee, composed of dealers who are members of NFPEDA's board, reviews petitions and makes recommendations to the board, which votes on the request.

James is engaged in litigation with Ford Tractor Operations. Ford Tractor sent the dealership a notice of franchise termination on Sept. 28, 1981, to be effective Oct. 28, 1981.

In a subsequent letter dated Nov. 6, 1981, H. J. Head, then Ford Tractor's general operations manager, North America, told James that the termination of the agreement "was a result of Polk Tractor Co.'s inability to live up to the sales and service obligation in its primary market area...."

Subsequent to receiving termination notice, Polk Tractor sought legal remedy, applying in Polk County (Fla.) Circuit Court for a preliminary and permanent injunction against Ford Motor Co., enforcing the termination, and for damages for breach of contract.

In the complaint, Polk Tractor

(Continued on page 41)

AUCTION PRICES OF USED EQUIPMENT

An exclusive I&T monthly report of actual prices paid recently at these leading national wholesale auctions.

Asterisk beside tractor price indicates highest bid offered on tractors which were not sold.

YODER & FREY, INC.
Archbold, Ohio
July 13, 1982

INTERNATIONAL HARVESTER TRACTORS

A, 1950 (Rough) 410
A, 1949 (Rough) 650
Cub Loboy, 1965 (Good) 2125*
154 Loboy, 1974 (Good) 1935
H, Idr., 1945 (Rough) 550*
H, ... 500
Sup. H, 1954 (Good) 850
M, 1950 (Rough) 750
M, 1949 (Rough) 550*
Sup. M TA, 1952 (Rough) 800
Sup. M, 1952 (Fair) 1000*
Sup. M, 1953 (Fair) 850
300, 1956 (Fair) 875
350, 1957 (Rough) 850
400, 1956 (Fair) 1050
454, 1972 (Good) 5000*
434, (Fair) 2500*
434, (Good) 1625
434, 1968 (Rough) 2050
460 diesel, 1958 (Good) 1800
504, 1965 (Rough) 2200*
560 diesel, 1960 (Fair) 1650
560, 1959 (Fair) 1575
560, 1958 (Rough) 1800*
656, Idr., 1969 (Fair) 3600*
656, 1970 (Fair) 2700*
656 diesel, 1967 (Rough) 3200*
706, 1965 (Fair) 2300*
706, 1965 (Fair) 2600*
756 diesel, 1970 (Good) 5950
806 diesel, 1965 (Fair) 3600*
806, 1965 (Good) 2900*
826 diesel, 1970 (Fair) 5250*
966 diesel, ... 8100
986 diesel, 1979 (Excellent) 14,000*
1086, 1975 (Good) 9200*
1206 diesel, 1963 (Fair) 4000*
1256 diesel, 1967 (Fair) 5300*
1466, 1974 (Fair) 9200*
1466, 1973 (Fair) 6000*
1566, 1975 (Fair) 9500*
1586 diesel, 1979 (Good) 15,000*
4386, 1977 (Fair) 11,250*
4166, 1973 (Rough) 7100*

WHITE TRACTORS

2-105, (Good) 9700*
4-150, 1975 (Rough) 7000*
4-180, 1974 (Rough) 7500
2-30, 1981 (Excellent) 4800*

MASSEY-FERGUSON TRACTORS

TE-20, 1949 (Good) 775
TE-20, ... 775
TE-20 440
40, 1958 (Good) 2350
40, ... 1050
50, ... 900
35 diesel, 1961 (Good) 2300
65, 1961 (Rough) 1200
Sup-90 diesel, 1964 (Rough) 1770*
90, ... 1425
135, 1969 (Rough) 1935
165 diesel, 1969 (Fair) 2600
165, 1966 (Fair) 3275
165, ... 3750
165, ... 2700
165 diesel, 1967 (Fair) 2925*
165, 1968 (Good) 3425
175 diesel, 1969 (Fair) 3100*
175 diesel, ... 3725
180 diesel, 1969 (Good) 3600*
245, 1976 (Good) 5175
255 7400
265, 1976 (Fair) 6000*
1085 diesel, 1973 (Good) 6300*
1800, (Rough) 8500*
2135, Idr., 1970 (Rough) 3600*
1150, 1969 (Fair) 4800*

DEUTZ TRACTOR

D4006 1900

MASSEY-HARRIS TRACTOR

44, 1950 (Rough) 200

MINNEAPOLIS-MOLINE TRACTORS

M-5, 1960 (Rough) 1300*
1600, (Rough) 6000*
Z-B, 1954 (Rough) 450
U, ... 190

COCKSHUTT TRACTOR

30, 1950 (Rough) 400

FORD TRACTORS

8N, 1949 (Fair) 1200
8N, 1950 (Fair) 1290
8N, 1952 (Rough) 1150
8N, 1950 (Fair) 1100
8N, 1950 (Good) 1100
8N, 1949 (Good) 1125
8N, ... 1225
9N, 1945 (Rough) 775
9N, 1946 (Rough) 875
9N, 1945 (Fair) 1225
9N, ... 850
9N, 1940 (Rough) 625
800, 1955 (Fair) 1675
801, ... 2700
901, 1956 (Rough) 1400*
3000, ... 2900
3000, 1972 (Fair) 2700
850, Idr., 1958 (Good) 1925
4000, 1959 (Fair) 2300*

(More...)

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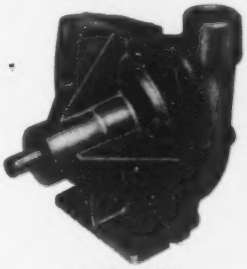
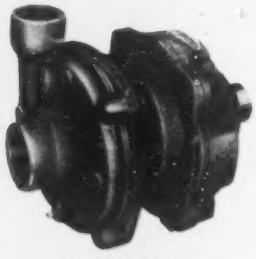


Series 9200



Series 9000

	max. rpm	gpm at	psi
9300 HM Hydraulic	n/a	119 max. 43	30 80 max.
9000 PTO/Solid shaft	600	130 max. 74	20 70 max.
	1000	124 max. 55	20 70 max.
9200 belt/direct	6000	136 max. 86	40 160 max.

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Circle (14) on Reply Card

Auctions *(continued)*

4000, 1971 (Good) 3100*
4000 diesel, 1973 (Good) 4475
4000 diesel, 1974 (Good) 3450
5000, 1973 (Fair) 4700*
8600, 1975 (Fair) 7400*
9000, 1973 (Fair) 7600*
Jubilee, 1953 (Fair) 1350*
Jubilee, 1953 (Fair) 1475*
Jubilee, 1961 (Good) 1475
861, 1959 (Rough) 1325
861, ... 1370
Sup. Mjr., 1962 (Rough) 600*
4500, backhoe, ... 3700

DAVID BROWN TRACTOR
1200 deisel, 1969 (Fair) 2200

CASE TRACTORS
411, 1956 (Fair) 1350
530 backhoe, ldr., ... 4500
530 backhoe, ldr., ... 4300*
800, 1958 (Rough) 700*
830 diesel, 1963 (Fair) 1600
930, 1965 (Rough) 2300*
970, 1972 (Fair) 5000
1070 diesel, ... 9500
1270, 1973 (Fair) 8000*
SC, 1953 (Rough) 185

JOHN DEERE TRACTORS
B, ldr., 1950 (Rough) 500
L, 1950 (Fair) 700*
70, 1955 (Rough) 700*
70, 1954 (Fair) 950
720 diesel, 1959 (Fair) 1100*
2020 diesel, ... 4400
2510, 1963 (Fair) 3300
2510, 1964 (Good) 3600*
3020 diesel, 1969 (Good) 5200*
4020 diesel, 1967 (Good) 6200*
4020, 1964 (Fair) 5100*
4020, 1964 (Fair) 4600*
4020, 1967 (Fair) 5000*
4020, 1968 (Fair) 3100*
4020 diesel, 1964 (Fair) 5100*
4020 diesel, 1964 (Good) 4900
4430, 1976 (Good) 13,000*
4430, 1974 (Good) 13,250*
4430 diesel, 1973 (Fair) 12,750*
4630, 1977 (Good) 14,100*
4640, 1981
(Excellent) 28,500*
5020, 1970 (Good) 5200*
6030 diesel, ... 7900
500, backhoe, ldr., ... 6350

ALLIS-CHALMERS TRACTORS
B, 1950 (Fair) 1250*
C, ... 550
CA, 1952 (Rough) 675
WC, ... 225
WD-45, ... 625
D-17, 1965 (Fair) 1490
D-17, 1962 (Fair) 1425
D-17, 1962 (Rough) 1750
D-17, 1961 (Fair) 850*
D-21, 1967 (Good) 4800*
185, 1969 (Fair) 3700*
190XT, 1969 (Fair) 3450
200 diesel, 1974 (Good) 6800*
200, 1973 (Good) 7000*
210, 1972 (Good) 5500*
160, 1968 (Fair) 2600

OLIVER TRACTORS
77, ... 550
1600, 1960 (Fair) 2700
1600, 1963 (Fair) 2850*
1800 diesel, 1964 (Fair) 2925
1850 diesel, 1967 (Rough) 3100
1855, 1972 (Fair) 4400*
60, 1935 (Rough) 475
55, 1956 (Rough) 935

JONES FARM EQUIPMENT CO.
Dothan, Alabama
July 13, 1982

ALLIS-CHALMERS TRACTORS
6040 diesel, 1974 (Fair) 3750
D14, 1958 (Rough) 550

CASE TRACTORS
2470 diesel, 1974 (Good) 7400
530 diesel, 1964 (Good) 1400

DAVID BROWN TRACTORS
990 diesel, 1965 (Rough) 600
880 diesel, 1963 (Rough) 475

DEUTZ TRACTORS
8006 diesel, (Rough) 1000
6006 diesel, (Good) 4400*

MASSEY-FERGUSON TRACTORS
1135 diesel, cab, duals, 1977
(Excellent) 9100
1100 diesel, 1968 (Rough) 2400*
245 diesel, 1976 (Excellent) 5900
245 diesel, 1976 (Excellent) 6100
180 diesel, 1969 (Excellent) 3700
180 diesel, 1967 (Excellent) 3700
180 diesel, 1966 (Good) 3475
180 diesel, 1966 (Good) 3050
175 diesel, 1974 (Excellent) 3900*
175 diesel, 1971 (Fair) 2650*
165 diesel, 1971 (Good) 3300
165 diesel, 1970 (Good) 3300*
165 diesel, 1968 (Good) 3550*
150 diesel, 1968 (Good) 2600
135 diesel, 1969 (Good) 3050
135 diesel, 1967 (Excellent) 3400
135 diesel, 1966 (Excellent) 3650
135 diesel, 1966 (Good) 3150
135 diesel, 1966 (Good) 3300
65 diesel, 1962 (Rough) 1000
65 diesel, 1961 (Fair) 1450
50 diesel C, winch, 1977
(Excellent) 7000
50, 1962 (Good) 1450
35 diesel, 1963 (Good) 2050*
35 diesel, 1963 (Good) 1750
35, 1958 (Fair) 1300
35, ldr., 1957 (Fair) 1500*
35, 1957 (Good) 1900*
TO30, 1953 (Good) 1225
TO20, 1948 (Rough) 550

FORD-FERGUSON TRACTOR
9N, 1944 (Fair) 500

FORD TRACTORS
9600 diesel, duals, 1975
(Good) 6200
7000 diesel, 1975 (Fair) 4900*
5600 diesel, 1971 (Fair) 5400*
5000 diesel, 1970 (Good) 4000
4410 diesel, ldr., 1968 (Fair) 2050
4000 diesel, 1970 (Rough) 2400*
4000 diesel, 1966 (Fair) 2950
3400 diesel, 1967 (Good) 2900
3000 diesel, 1972 (Excellent) 4400
3000 diesel, 1967 (Good) 2800*
3000 diesel, 1966 (Good) 3350
3000 diesel, 1966 (Excellent) 3600
2000, 1968 (Good) 2600
2000, 1966 (Good) 2300
2000, 1964 (Excellent) 2400
861 diesel, 1959 (Good) 1525
631, 1958 (Good) 1675
631, 1958 (Excellent) 2350

(More...)

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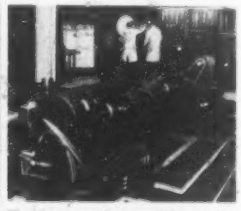

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Auctions *(continued)*

Maj. diesel, 1954 (Fair)	450
Dexta, 1961 (Excellent)	2000
Jub., 1953 (Good)	1650*
Jub., 1953 (Fair)	1300*
8N, 6-cyl., 1952 (Rough)	650*
8N, 1951 (Good)	1300*
8N, 1950 (Good)	1300
8N, 1950 (Good)	1275
INTERNATIONAL HARVESTER TRACTORS	
986 diesel, 1976 (Good)	7700*
856 diesel, 1971 (Excellent)	5250*
574 diesel, 1973 (Fair)	2650
544 diesel, 1966 (Good)	2650*
504 diesel, 1967 (Good)	1275*
454 diesel, 1971 (Fair)	2000*
424 diesel, 1965 (Good)	2050
424, 1965 (Fair)	1425*
2400 diesel, 1972 (Fair)	1500
B275 diesel, 1958 (Good)	1100
B275 diesel, 1958 (Fair)	725
Sup. A, 1948 (Good)	950*
Sup. A, cult., 1948 (Good)	1350*
140, plow, cult., 1966 (Good)	2500*
Cub, mo., 1956 (Good)	1400
Cub, mo., 1956 (Good)	900
Cub, mo., 1953 (Excellent)	1700
Cub, cult., plow, mo., 1952 (Excellent)	1525
Cub, mo., 1952 (Excellent)	1700
Cub, cult., plt., 1951 (Good)	1200
Cub, cult., 1949 (Excellent)	1600
Cub, mo., 1948 (Good)	950
Cub, cult., 1948 (Excellent)	1500*
JOHN DEERE TRACTORS	
4430 diesel, 1973 (Excellent)	9800
4430 diesel, 1973 (Good)	7050
4020 diesel, 1968 (Good)	5250
3020 diesel, 1965 (Good)	4550*
2940 diesel, 1980 (Excellent)	12,200
2840 diesel, 1977 (Excellent)	9600*
2640 diesel, 1976 (Excellent)	7300
2020 diesel, 1966 (Excellent)	4350*
2020 diesel, 1966 (Excellent)	4200
2020 diesel, 1966 (Good)	3400*
2010 diesel, 1963 (Good)	1850*
2010 diesel, 1963 (Good)	1900
1020 diesel, 1966 (Excellent)	3700
1020 diesel, 1966 (Rough)	850*
510, har., 1957 (Good)	1300
420, 1958 (Good)	875
M, cult., plt., plow, 1949 (Fair)	550
KUBOTA TRACTORS	
L245DT, 1978 (Good)	3400
L224DT, ldr., 1978 (Good)	1750
OLIVER TRACTOR	
550 diesel, 1964 (Excellent)	2100

NOTES:
Prices reported are for individual sales at wholesale on an "as is," "cash and carry" basis. Prices reported are **not** averages.

Condition Classifications:
EXCELLENT: Engine in perfect condition, 400 to 600 hours of use. Rubber – 80% tread remaining, no breaks or cracks. Paint – original and bright. General appearance: excellent.

GOOD: Engine in good running condition. Rubber – 70% tread remaining, no breaks or cracks. Paint – original or a good repaint job. General appearance: good over-all.

FAIR: Engine possibly in need of a minor overhaul. Rubber – 60% tread remaining, some cracking evident in sidewalls. Paint – only fair, weathered and some rust apparent. General appearance: worn, some dents, minor parts (gage covers, etc.) missing or broken.

ROUGH: Engine obviously in need of a major overhaul. Rubber – smooth. Paint – scarred, weathered, rusty. General appearance: dents, ruptures, broken parts, loose wires, components (such as lights) broken, missing or inoperative.

Don't sell too low... and don't pay too much...

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The business magazine of the farm & industrial equipment industry

October 1982
TWO DOLLARS

Implement & Tractor

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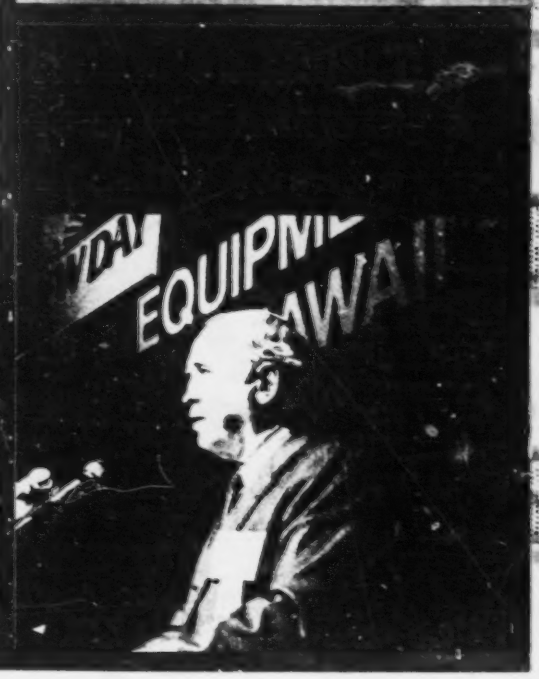
ew NFPEDA Leaders
page 54

What Do FEMAns Make?
page 18

FEMA



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Previewing Three Important Conventions page 26

FARM EQUIPMENT WHOLESALERS ASSOCIATION

NEW DAYS
NEW WAYS
THE KEY TO 83

"Planning Our Productive Future"

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Implement & Tractor

The business magazine of the farm & industrial equipment industry

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11: How Distributors See It. Distributors responded strongly to an I&T survey on issues such as wholesaling and repping functions, new products, liability protection and overseas-made products. Here's what we found.

14: Distributor Scouting Mission to Britain. A British tour with U.S. farm equipment distributors provides a rare opportunity to look at the different approaches to finding new products.

18: What Do FEMAns Make? I&T provides an updated list of FEMA members and products.

26: Previewing Three Important Conventions. A brief rundown on the programming for the FEWA, FEMA, and AIMRA conventions which will all be held in Atlanta starting Nov. 7.

32: The Chatten Experience... This Case dealer tells how he has been successful in combining agricultural and construction lines. A *1982: Year of the Salesman* feature article.

36: Valves – Energy Control Devices. Melvin E. Long explains how valves control energy flow by direction, pressure, and amount. Part Four in the series on farm equipment hydraulics.

54: NFPEDA 83rd Annual Convention. I&T highlights the dealers' positive attitudes at this convention in Honolulu.

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What's Ahead...

I&T SINCE 1886

October, 1982

U.S. RETAIL SALES FOR AUGUST, according to the Farm & Industrial Equipment Institute flash report, continued their downward trend:

	Unit Retail Sales					
	August			January-August		
	1982	1981	Pct. Change	1982	1981	Pct. Change
Farm Wheel Tractors:						
2-wheel drive						
40-100 hp	2,926	3,234	- 9.5	28,257	35,700	-20.8
Over 100 hp	1,649	3,027	-45.5	20,273	27,860	-27.2
Total 2-wheel drive	4,575	6,261	-26.9	48,530	63,560	-23.6
4-wheel drive	382	645	-40.8	4,577	6,409	-28.6
Total Tractors	4,957	6,906	-28.2	53,107	69,969	-24.1
Combines (S-P)	1,309	2,412	-45.7	7,389	13,079	-43.5
Balers*	987	1,608	-38.6	7,170	10,842	-33.9
Forage Harvesters**	592	879	-32.7	2,842	3,990	-28.8
Mower-Conditioners	1,236	1,800	-31.3	11,303	14,664	-22.9

*Bales under 200 lbs. **Shear-bar type.

INTERNATIONAL HARVESTER HAS SOLD ITS INTEREST IN STEIGER TRACTOR CO. to Deutz Corp., the Atlanta-based unit of Klockner-Humboldt-Deutz AG, Cologne, West Germany. The interest, 1 million shares worth $6.75 million, is 29 to 30 per cent of Steiger. The marketing agreement between IH and Steiger, under which Steiger sells its tractors through certain IH dealers and compensates IH for such sales, continues unchanged. Deutz Corp. sells air-cooled engines, farm tractors and hay tools. (IH also recently announced an agreement in principle for the cash sale of its construction business to Dresser Industries, Inc., Dallas, Tex.)

NORTH AMERICAN AG TRACTOR RETAIL SALES IN 1982: 103,000; IN 1983: 107,000; BY 1986: 149,750 (excluding under-40-hp models). Thus forecasts Jerry Anderson of Bernstein & Co., New York investment firm. For combines: 21,500 in '82; 22,500 in '83; 31,000 in 1986. Allis-Chalmers Corp. farm equipment sales are expected by Anderson to drop from 1981's $700 million to $480 million this year, then rebound to $610 million in 1983 and $1.05 billion by 1986. Deere & Co. farm equipment sales, $4.665 billion in 1981, are predicted to be $4.348 billion this year, $4.724 billion in 1983 and $7.352 billion in 1986.

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HOW DISTRIBUTORS SEE IT

Strong response to I&T survey touches on the wholesaling and repping functions, on new products, on liability protection, overseas-made products and other concerns.

By Bill Fogarty and Ann Thorne

■WELL, I&T has gone and taken another survey. Yes, we know what a pain in the neck they can be, especially when somebody surveys us...and the questions are long, hard to answer and *dumb*.

But this time, we're not apologizing, because we must have asked something right.

I&T developed a short survey about a few points that interest us concerning shortline equipment distribution and mailed them to member companies of the Farm Equipment Wholesalers Assn. and the Agricultural & Industrial Manufacturers Representatives Assn. We sent out 299 questionnaires.

And when we stopped counting, we had 148 responses. About 25 more replies came in after we had to cut it off.

Distributors Consider Overseas-Made Products
(figures are percentages of response)

Product Concern	More than Adequate	Adequate	Less than Adequate
Product reliability	41.3	50.5	8.2
Quality of sales representation	9.2	59.3	31.5
Level of market research	8.4	38.3	53.3
Quality of service backup	9.0	50.0	41.0
Training levels	4.6	44.5	50.9
Parts availability	10.4	49.0	40.6
Price attractiveness	41.6	43.3	15.1
Willingness to advertise	16.8	50.5	32.7
Literature, manuals, other written communication	17.7	47.0	35.3

Function

We divided the responses into two piles—wholesaler and rep, according to how the first question was answered: *Please indicate if your business is primarily wholesaling or repping*. Seventy-six respondents were wholesalers, 72 were reps.

We asked the wholesalers to indicate if they do any repping. Fifty-one per cent said they don't, 49 per cent said they do.

Likewise, 64 per cent of the reps said they don't wholesale, 36 per cent said they do.

Comment: First, remember that these responses in no way disclose the extent to which a wholesaler reps or a rep wholesales. For most, the extent is probably very limited.

It does indicate that when it comes to getting a product to the marketplace, particularly in the present economy, the manufacturer and the distributor are going to work out what is mutually most acceptable, most workable.

More/fewer products

We asked how many new products the respondents had taken on in the last two years. We found that the reps were more likely to have taken on new products. Ninty-seven per cent had added to their lines, compared with 88 per cent of the wholesalers. In both groups 80 per cent added one to six new products. Of these new products 70 per cent of the respondents said more than half of the products were completely new, not merely a mild upgrading or replacement for something already in the catalog.

Both groups dropped fewer items than they added. Thirty-two per cent of the reps did not eliminate any products. Fifty-eight per cent dropped one to three, and only 7 per cent dropped more than four. Of the wholesalers, 9.2 per cent did not eliminate any products, 38 per cent dropped one to three products, and 30 per cent dropped four to six products.

Product innovations

Our next question asked the respondents to assess the number of innovative new products coming on the market today. Forty-seven (65 per cent) of the reps and 35 (46 per cent) of the wholesalers thought there were about the same number of innovations as in the past. However, 33 (43.4 per cent) of the wholesalers and 10 (13.8 per cent) of the reps thought there were less.

One wholesaler, Gene Ashley, Southern Plow Co., Dallas, Tex., commented, "It's a shame that almost all new concepts in equipment are coming from Europe." He speculates on what it is that is keeping the shortline manufacturers in the U.S. from keeping up, and suggests that perhaps federal regulations, labor costs and a growing dependence on staple products are hampering the development of new equipment.

Demand for services

Both the wholesalers and the reps reported an increase in the number of manufacturers who are seeking their services. Eighty-three per cent of the reps and 63 per cent of the wholesalers have observed an increase. Of the remaining respondents, most perceived the requests for service to have remained the same, with only 6 wholesalers (8 per cent) and one rep (1 per cent) who thought there has been a decline.

Product liability

The majority of both wholesalers (73.7 per cent) and manufacturer's reps (75 per cent) require a contract with their suppliers for protection in matters of product liability. Most of those who said they don't require contracts commented that they would like to have them, but were unable to get one, or that they thought a verbal assurance of product liability was as good as a written one. One rep said he had his own in-

(More...)

Distributor Survey *(continued)*

surance, and another commented that his contracts varied from product to product.

Overseas products

We asked the distributors a few questions about overseas-made products. If a European- or Japanese-made piece of farm equipment is going to make it in North America—for anything short of a combine or a big-horsepower tractor line—it will usually fall to wholesalers and manufacturers' reps to get things started and to grow.

At any given time, how many of the industry's wholesalers and reps are involved in handling overseas-made products, and to what extent?

Of our 76 responding wholesalers, 60 handle such items and 16 do not. For the reps, the number is smaller: 32 do and 40 do not. We asked them to indicate what percentage of their sales came from overseas products, and here's how it came out (presented both as number of responses and as percentage of responses):

Pct. of Sales Volume	Wholesalers	Representatives
None	16/21%	40/55%
1-5	16/21%	11/15%
6-10	9/12%	3/4%
11-15	5/6%	3/4%
16-25	16/21%	5/7%
26-50	9/12%	8/11%
51-100	5/6%	2/4%
Totals	76/100%	72/100%

We asked them to indicate if this level of activity represented an increase, percentage-wise, a decrease or about the same proportion as five years ago. Among the wholesalers, 32 were handling more, 15 handling less and 13 about the same. Among the reps, 17 were handling more, six less and nine about the same. In addition, some wholesalers and reps had been handling overseas-made farm equipment five years ago but were not handling any as of August, 1982.

Also on the subject of overseas-made products, we asked the wholesalers and reps to give us generalized opinions about them. Specifically, we asked for ratings of overseas manufacturers' performance in nine important areas—not against or in comparison with North American manufacturers but *in comparison with what it takes to make it on the North American market.* See the table with this article.

Comment: If this report falls into the hands of some overseas farm equipment makers who have dreams about getting a piece of the North American market, we suggest they study the table of responses closely.

The people who are doing the rating, remember, are the ones who have to sell those imported products and keep them sold. These wholesalers and reps have a tremendous motivation to put these lines across.

Dealer attrition

We asked the respondents to assess the rate of dealer attrition in the last 18 months. The reps sustained the greatest losses with 30 per cent marking that they had experienced a considerable loss, compared with 18 per cent of the wholesalers. On the other hand, more wholesalers (71 per cent) than reps (50 per cent) marked that they had taken some loss. Five per cent of the wholesalers and 18 per cent of the reps experienced little or no loss.

Twenty-six per cent of the reps thought the loss had a considerable effect on their sales volume, compared with 10 per cent of the wholesalers. Forty-five per cent of the reps and 60 per cent of the wholesalers felt a moderate impact, with 25 per cent in both categories who did not think the loss of outlets had affected their sales volume.

The seriousness of dealer attrition elicited a number of comments, some of which were pessimistic. One wholesaler said he had experienced a 30 per cent loss of dealerships in his area in the last two years. A rep noted that there had been a loss of 20 dealers in Kentucky and Tennessee in just the last six months. Some of the respondents considered the losses to be mainly of marginal dealerships, but one rep wrote, "It's just time to get out."

Several respondents noted an increase in the number of shortline dealers. They argued that shortlines offer a better opportunity for profits today because of the weak market for big ticket items.

Some respondents were still optimistic about the future of the industry. Joe Murray, a rep, summed up the optimist's view in the conclusion of his note: "It will be a great market when the cycles reverse. I intend on being one independent rep that survives and prospers on the up side of the market." I&T

Industry in Motion

Southeast Mfg. Co., Joplin, Mo., has completed the purchase of Independent Mfg. Co., B/J Mfg. Inc., and I.M.C.O. Enterprises, Inc., Neodesha, Kan. Southeast will continue to use the IMCO and Big Ox names and in most areas will retain the same sales representatives.

Ingersoll Products Corp., Chicago, Ill., has appointed Arthur C. Fultz, Jr., as sales manager in a 13-state Southern region. He replaces Joseph Raklovitz who is retiring this year after 36 years with the company.

Ralph L. Notch has been appointed vice-president, international sales and marketing, of the **Hypro Div., Lear Siegler, Inc.**, New Brighton, Minn.

Wayne Worth has been appointed Kansas and Missouri sales representative for **E. L. Caldwell & Sons, Inc.**, Corpus Christi, Texas.

Ford Tractor International Operations, Troy, Mich., has named Meldrum and Fewsmith, Inc., Southfield, Mich., as its advertising agency.

The **Stauff Corp.**, Waldwick, N.J., manufacturer of hydraulic systems and accessories, has opened a new regional facility in Plano, Texas. The new office includes a 5,500-sq.-ft. warehouse and will serve the states of Texas, New Mexico, Oklahoma, Arkansas, Louisiana and Mississippi. Dave Pellerin is regional sales manager.

Dennis Schwitters has resigned as president of **Vicon Farm Machinery, Inc.**, Chesapeake, Va. Vicon N.V. of Nieuw Vennep, Holland, the parent company, will reorganize the U.S. firm into three independent companies as of Jan. 1, 1983. Schwitters is a director of the Farm Equipment Manufacturers Assn.

Some 100 sales persons for **Dixon Industries**, Coffeyville, Kan., attended Dixon's Ninth Annual Sales Meeting, August 1-3, at the Kansas City Marriott, Kansas City International Airport.